

**Project No. 1251-100**  
**Crude Oil Tank Farms Project, Agrood Area 30 (Module-1)**



<b>System ID</b>	030-CP-001
<b>System Description</b>	Piping Cathodic Protection System

Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)
1	Mechanical Completion Certificate (MCC)	
2	Ready for Startup Certificate (RFSU)	
3	System Punch Lists	
4	System Limits Marked Up P&ID	
5	System Index	
6	Piping Pre-Commissioning	
	6.01) Piping Test Packs	
	6.02) Piping Pre-commissioning Check Lists	
7	Piping Commissioning	
	7.01) Service Test, GLT, CLT and N2 Purging Certificates	
	7.02) Piping Commissioning Check Lists	
Sr.	Pre-Commissioning and Commissioning Dossier Index	Applicable (Yes/No)
8	Mechanical Pre-Commissioning	
	8.01) System Mechanical Index	
	8.02) Equipment Drawings	
	8.03) Equipment Datasheets	
	8.04) Boxing-up Certificates	

	8.05) Grouting Certificates	
	8.06) Pre-Alignment Certificates	
	8.07) Mechanical Pre-Commissioning Checklists	
<b>9</b>	<b>Mechanical Commissioning</b>	
	9.01) Final Alignment Certificates	
	9.02) Motor Solo Run Certificates	
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	9.04) Mechanical Commissioning Checklists	
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<b>10</b>	<b>Instrumentation Pre-Commissioning</b>	
	10.01) System Instrument Index	
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	10.04) System Instrumentation Wiring Diagram	
	10.05) Hook-up Drawing (Mechanical & Pneumatic)	
	10.06) Instruments Cables Schedule	
	10.07) Instruments Cables Laying Certificates	
	10.08) Instruments Cables Termination Certificates	
	10.09) Instruments Cables Testing Certificates	
	10.10) Instruments Calibration Certificates	
	10.11) Instrument Loop Checks Certificates	
	10.12) Instrumentation Pre-Commissioning Check Lists	
	10.13) Instrumentation Supplier Check Lists & Reports	
<b>11</b>	<b>Instrumentation Commissioning</b>	
	11.01) Instrumentation Function Test Certificates	
	11.02) Instrumentation Supplier Check Lists & Reports	
<b>Sr.</b>	<b>Pre-Commissioning and Commissioning Dossier Index</b>	<b>Applicable (Yes/No)</b>
<b>12</b>	<b>Electrical Pre-Commissioning</b>	
	12.01) System Electrical Index	
	12.02) Electrical Drawings	
	12.03) Motor Datasheets	
	12.04) Electrical Cables Schedule	
	12.05) Electrical Cables Laying Certificates	
	12.06) Electrical Cables Testing Certificates	
	12.07) Electrical Cables Termination Certificates	
	12.08) FAT Reports & Certificates	
	12.09) SAT Reports & Certificates	
	12.10) Electrical Pre-Commissioning Check Lists	
	12.11) Electrical Supplier Check Lists & Reports	



<b>13</b>	<b>Electrical Commissioning</b>	
	13.01) Electrical -Commissioning Check Lists	
	13.02) Electrical Supplier Check Lists & Reports	
<b>14</b>	<b>Red Marked-up Drawings</b>	
	14.01) P&ID	
	14.02) Instrumentation Drawings	
	14.03) Electrical Drawings	



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 1-Mechanical Completion Certificate (MCC)





## SYSTEM MECHANICAL COMPLETION CERTIFICATE (MCC)

**PROJECT TITLE** : CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

**PROJECT No** : 01251-100


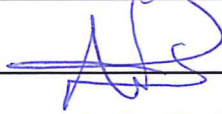
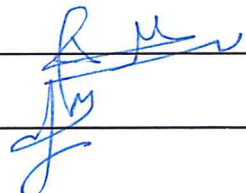
**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

### THIS IS TO CERTIFY THAT:

- THE ABOVE SYSTEM HAS BEEN FABRICATED, ERECTED, INSTALLED AND TESTED TO THE REQUIREMENTS OF THE CONTRACT DRAWINGS, SPECIFICATIONS, THE APPLICABLE CODES AND STANDARDS.
- ALL PRE-COMMISSIONING RELEVANT ACTIVITIES, TESTS, INSPECTIONS AND CHECKS HAVE BEEN CARRIED OUT FOR THIS SYSTEM AND FOUND ACCEPTABLE.
- Q/C DOCUMENTATION OF THE ABOVE SYSTEM HAS BEEN AUDITED BY THE CUSTOMER SITE QUALITY CONTROL AND FOUND COMPLETED.
- ALL PUNCH LIST ITEMS CATEGORY (A) IN THIS SUBSYSTEM WERE CLEARED.
- THIS SYSTEM IS MECHANICALLY COMPLETED ON THE DATE AND READY FOR COMMISSIONING (RFC) WITH THE FOLLOWING EXCEPTIONS.

### EXCEPTIONS :

COMPANY	PETROJET	ENPPI	PMC
NAME	Sobhy Selem	Far / Abdulhah Fathy	
TITLE	Qc ESI Engineer	Const. Engineer	
SIGNATURE			
DATE	1-8-2021	1-8-2021	



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 2- Ready for Startup Certificate (RFSU)



## READY FOR START UP CERTIFICATE

PROJECT TITLE : EGPC CRUDE OIL TANK FARMS PROJECT (AGROOD-30)

PROJECT No. : 1251-100

SYSTEM /AREA /PLANT : Piping Cathodic Protection System


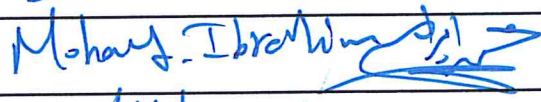
SYSTEM /AREA /PLANT No. : 030-CP-001

### THIS IS TO CERTIFY THAT:

- THE MENTIONED SYSTEM /AREA /PLANT IS READY FOR START UP WHERE ALL MECHANICAL WORKS, PRECOMMISSIONING AND COMMISSIONING ACTIVITIES HAVE BEEN SUCCESSFULLY COMPLETED.
- MECHANICAL COMPLETION CERTIFICATE(S) FOR THE MENTIONED SYSTEM / AREA / PLANT HAVE BEEN SIGNED.
- ISSUANCE OF THIS READY FOR START UP CERTIFICATE(S) SHALL NOT RELIEVE CONTRACTOR(S) FROM THEIR OBLIGATIONS TO COMPLETE THE REMAINING SYSTEMS NOR FROM THEIR WARRANTY OBLIGATIONS AND OTHER PROVISIONS OF THE CONTRACT.
- THE FOLLOWING EXCEPTIONS AGREED TO BE CLEARED AFTER START UP AND WILL NOT PREVENT START UP ACTIVITIES.

### EXCEPTIONS :

- Some readings which are below the criteria will be investigated and re-checked → Cleared refer to HOS <sup>MMH</sup> ~~MMH~~
- Final commissioning forms shall be provided on Saturday (20/11/2021) for approval.

COMPANY	ENPPI	PPC
NAME	Mohamed Mohsen	Mohamed Ibrahim
TITLE	Materials Engineer	Electrical engineer
SIGNATURE		
DATE	18/11/2021	18/11/2021



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 3- System Punch Lists



PROJECT TITLE : CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

PROJECT NUMBER : 01251-100

**DISCIPLINE: Cathodic Protection**

SYSTEM NAME: Piping Cathodic Protection System

SYSTEM ID: 030-CP-001

SUB-SYSTEM NAME:

SUB-SYSTEM ID:

NO	DESCRIPTION	CAT	ACTION BY	DISP	CLEARANCE APPROVED BY
1-	All remaining anodes should be finished	A	PTJ	ELC	<del>RM</del>
2-	All remaining TRS should be finished	A	PTJ	~	<del>RM</del>
3-	All remaining ASJB should be finished	A	PTJ	~	<del>RM</del>
4-	All remaining Test Post should be finished	A	PTJ	~	<del>RM</del>
5-	All remaining AJB, NJB should be finished	A	PTJ	~	<del>RM</del>
6-	All remaining Vent's Anode (wg) (scrub) should be finished	A	PTJ	~	<del>RM</del>
	Anodes should be completed.				<del>RM</del>
7-	Final married-up to be submitted				<del>RM</del>

CAT: CATEGORY(A,B,C) ,ACTION BY: (ENPPI,CONST.CONTRACTOR,SUPPLIER.....) , DISP: DESCIPLINE(PIP,MECH,ELECT,INST.....)

COMPANY	PTJ	ENPPI	PMC
NAME	Hostafa ibrahim	Reiner Herrlich	
SIGN.			
DATE	1 / 11 / 2021		



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
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#### 4- System Limits Marked Up P&ID





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 5- System Index



Project: 01251-100  
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System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 6- Piping Pre-Commissioning



Project: 01251-100  
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System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 6.01- Piping Test Packs



Project: 01251-100  
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## 6.02- Piping Pre-commissioning Check Lists





Project: 01251-100  
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System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 7- Piping Commissioning



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 7.01- Service Test, GLT, CLT and N2 Purging Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 7.02- Piping Commissioning Check Lists



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 8- Mechanical pre-Commissioning





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 8.01- System Mechanical Index



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 8.02- Equipment Drawings



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 8.03- Equipment Datasheets



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 8.04- Boxing-up Certificates





Project: 01251-100  
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System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 8.05- Grouting Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 8.06- Pre-Alignment Certificates



Project: 01251-100  
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System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 8.07- Mechanical Pre-Commissioning Checklists



Project: 01251-100  
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System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 9- Mechanical Commissioning





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID

030-CP-001

System Description

Piping Cathodic Protection System

## 9.01- Final Alignment Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 9.02- Motor Solo Run Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 9.03- Mechanical Run Test (MRT) Certificates



Project: 01251-100  
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System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 9.04- Mechanical Commissioning Checklists



Project: 01251-100  
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System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 9.05- Mechanical Supplier Check Lists & Reports





Project: 01251-100  
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System Description	Piping Cathodic Protection System

## 10- Instrumentation Pre-Commissioning



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 10.01- System Instrument Index



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 10.02- Instrument Data Sheets



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 10.03- Instrument Cable Schedule



Project: 01251-100  
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## 10.04- System Instrumentation Wiring Diagram



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System ID

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System Description

Piping Cathodic Protection System

## 10.05- Hook-up Drawing (Mechanical & Pneumatic)





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
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## 10.06- Instruments Cables Schedule



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
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## 10.07- Instruments Cables Laying Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
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## 10.08- Instruments Cables Termination Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
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## 10.09- Instruments Cables Testing Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 10.10- Instruments Calibration Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
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## 10.11- Instrument Loop Checks Certificates





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
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## 10.12- Instrumentation Pre-Commissioning Check Lists



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 10.13- Instrumentation Supplier Check Lists & Reports



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 11- Instrumentation Commissioning



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
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### 11.01) Instrumentation Function Test Certificates



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 11.02- Instrumentation Supplier Check Lists & Reports



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12- Electrical Pre-Commissioning



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.01- System Electrical Index



Form Type	Tag Description	Cathodic Protection	Cathodic Protection	Cathodic Protection	Form Type
Checklist	LV Cable	Electrical	P-030-T01-CPTR	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-030-T02-CPTR	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-030-T03-CPTR	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-030-T04-CPTR	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-030-T10-CPTR	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-AG030-TR-001	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-AG030-TR-002	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-AG030-TR-003	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-AG030-TR-004	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-AG030-TR-005	Piping Cathodic Protection System	030-CP-001
Checklist	LV Cable	Electrical	P-AG030-TR-006	Piping Cathodic Protection System	030-CP-001



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



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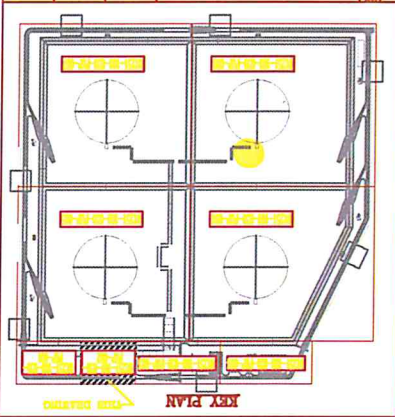
## 12.02- Electrical Drawings





1:150	1251-100-S30-D99-0005	02/08	8
<p><b>EGPC</b></p> <p>EGPC CRUDE OIL TANK FARM PIPING LAYOUT - AGR00D-GPC-030</p>			
<p>EGPC PROJECT NO. 1251-100-S30-D99-0005</p>			

NO.	DESCRIPTION	DATE	BY	CHECKED	APPROVED
1	REVISION FOR APPROVAL	02/08	...	...	...
2	REVISION FOR APPROVAL	02/08	...	...	...
3	REVISION FOR APPROVAL	02/08	...	...	...
4	REVISION FOR APPROVAL	02/08	...	...	...
5	REVISION FOR APPROVAL	02/08	...	...	...
6	REVISION FOR APPROVAL	02/08	...	...	...
7	REVISION FOR APPROVAL	02/08	...	...	...
8	REVISION FOR APPROVAL	02/08	...	...	...



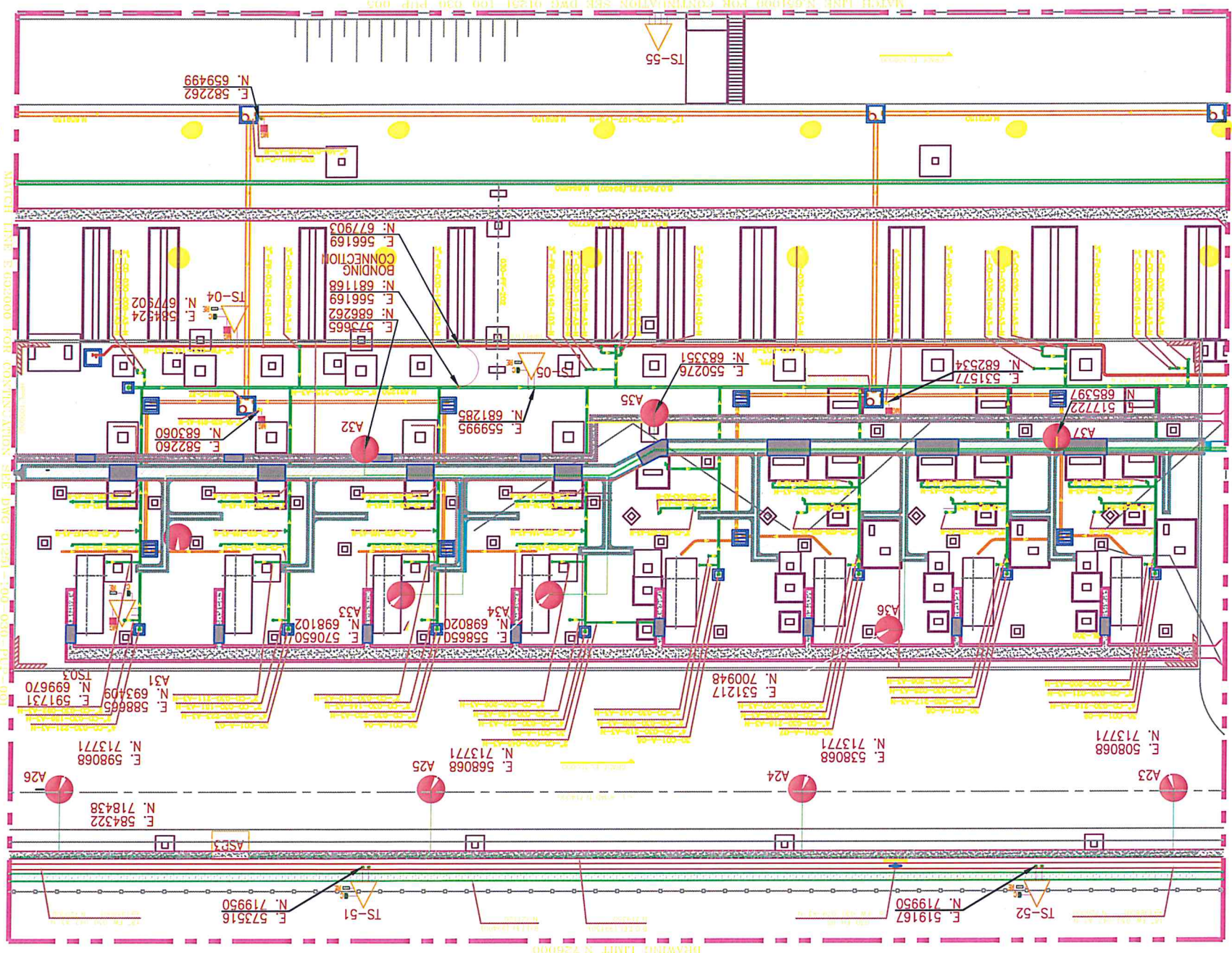
- LEGEND :**
- MMO ANODES
  - TRANSFORMER RECTIFIER
  - ANODE SPLITTING JUNCTION BOX
  - NEGATIVE JUNCTION BOX
  - POSITIVE JUNCTION BOX
  - TEST STATION WITH RE & COUPON
  - 35mm<sup>2</sup> XLPE/PVC POSITIVE FEEDER
  - 35mm<sup>2</sup> XLPE/PVC NEGATIVE FEEDER
  - 16mm<sup>2</sup> XLPE/PVC ANODE TAIL BLACK CABLE
  - 16mm<sup>2</sup> XLPE/PVC MONITORING BLACK CABLE
  - 10mm<sup>2</sup> XLPE/PVC REFERENCE ELECTRODE
  - 10mm<sup>2</sup> XLPE/PVC POLARISATION COUPON
  - BLUE CABLE
  - MG - MAGNESIUM ANODE

DOCUMENT NUMBER	DESCRIPTION
1251-100-S30-D99-0005	INSTALLATION DETAILS
1251-100-S30-D99-0006	ANODE INSTALLATION DRAWING
1251-100-S30-D01-0001	TRANSFORMER RECTIFIER GENERAL ARRANGEMENT
1251-100-S30-D01-0002	JUNCTION BOX GENERAL ARRANGEMENT
1251-100-S30-D01-0003	CATHODIC PROTECTION EQUIPMENT DATA SHEETS
1251-100-S30-D03-0008	DETAIL DESIGN REPORT AGR00D GPC 030
1251-100-S30-D99-0001	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL

**NOTES**

- THIS DRAWING HAS BEEN ISSUED FOR CATHODIC PROTECTION EQUIPMENT.
- FOR ANY OTHER DIMENSIONS PLEASE REFER TO DATA SHEETS (1251-100-S30-D99-0005) AND (1251-100-S30-D99-0006).
- ONE MUST BE GIVEN THAT THE INSTALLATION OF THE ANODE AND JUNCTION BOXES MUST BE IN ACCORDANCE WITH THE DRAWING.
- EQUIPMENT SHALL BE INSTALLED IN AN UNCLASSIFIED AREA. INFORMATION REGARDING AREA CLASSIFICATION IS GIVEN WITHIN DRAWING NUMBER (1251-100-S30-D99-0005).
- A MAXIMUM ALLOWABLE VARIATION FOR LOCATION OF THE ANODE JUNCTION BOXES IS (10 METERS).
- IN CASE OF ANY CONFLICT PLEASE REFER TO THE CATHODIC PROTECTION DESIGNER FOR RESOLUTION.
- ALL INSTALLATION WORKS SHALL CONSIDER INSTALLATION MANUAL, ISSUED BY COMPANY.

NAME	DATE	1251-100-S30-D99-0005
SUPPLIER DOCUMENT REVIEW	PROJECT TITLE	NEW CRUDE OIL TANK FARM PROJECT
PACKAGE DESCRIPTION	CATHODIC PROTECTION	
EQUIPMENT TAG	DOCUMENT NUMBER	D99
CODE IDENTIFIER	REVISION	2 OF 8



MATCH LINE E-504000 FOR CONTINUATION  
SHEET DWG-01251-100-030-21P-003

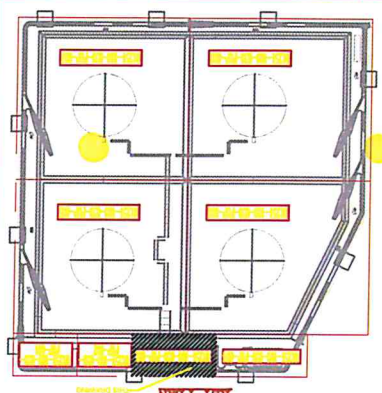




SIGNATURE		DATE:		1251-100-S30-D9-0005		8	
NAME		DOCUMENT NUMBER		REVISION			
PASSAGE TO PROCEED DOES NOT CONSTITUTE APPROVAL OR AFFIRMATION OF DESIGN DETAILS OR OTHER MATTERS. THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN.		CODE IDENTIFIER		D99		SHEET 3 OF 8	
1. Hold the 6 copies recently be specified on the document. 2. Hold the 6 copies recently be specified on the document. 3. Hold the 6 copies recently be specified on the document. 4. Hold the 6 copies recently be specified on the document. 5. Hold the 6 copies recently be specified on the document.		EQUIPMENT TAG					
1. Hold the 6 copies recently be specified on the document. 2. Hold the 6 copies recently be specified on the document. 3. Hold the 6 copies recently be specified on the document. 4. Hold the 6 copies recently be specified on the document. 5. Hold the 6 copies recently be specified on the document.		PACKAGE DESCRIPTION		CATHODIC PROTECTION			
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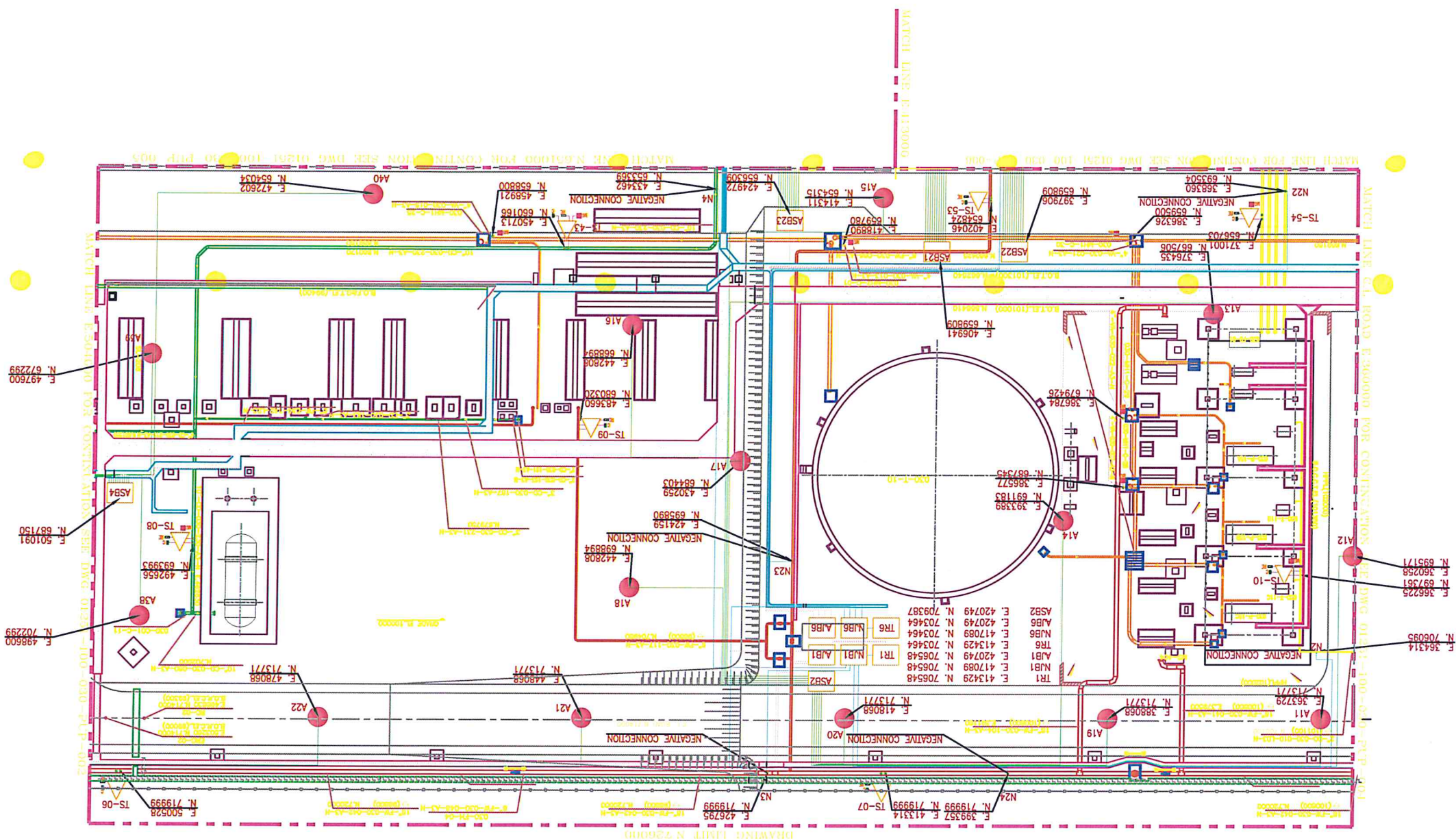


EGPC

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- |   |  |                                                  |
|---|--|--------------------------------------------------|
|   |  | MAG ANODES                                       |
|   |  | TRANSFORMER RECTIFIER                            |
|   |  | ANODE SPLITTING JUNCTION BOX                     |
|   |  | NEGATIVE JUNCTION BOX                            |
|   |  | POSITIVE JUNCTION BOX                            |
|   |  | TEST STATION WITH RE & COUPON                    |
| - |  | 35mm? XLPE/PVC POSITIVE FEEDER<br>BLACK CABLE    |
| - |  | 35mm? XLPE/PVC NEGATIVE FEEDER<br>JUNCTION BOX   |
| - |  | 16mm? XLPE/PVC TAIL BLACK CABLE                  |
| - |  | 16mm? XLPE/PVC MONITORING BLACK CABLE            |
| - |  | 10mm? XLPE/PVC REFERENCE ELECTRODE               |
| - |  | 10mm? XLPE/PVC POLARISATION COUPON<br>BLUE CABLE |
|   |  | MAGNESIUM ANODE                                  |

### LEGEND

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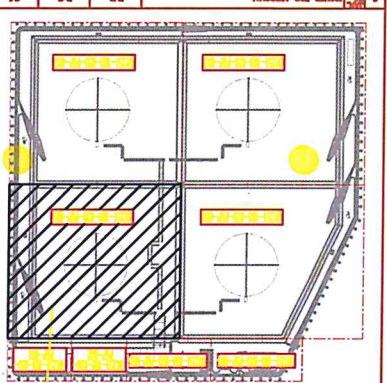
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NO.	REVISION	DATE	BY	CHKD.	APPD.
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2	2	05/08	0005	0005	0005
3	3	05/08	0005	0005	0005
4	4	05/08	0005	0005	0005
5	5	05/08	0005	0005	0005
6	6	05/08	0005	0005	0005
7	7	05/08	0005	0005	0005
8	8	05/08	0005	0005	0005



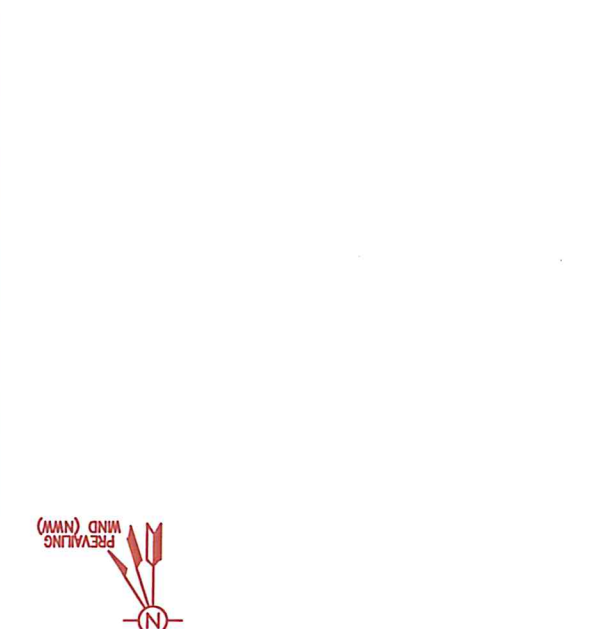
- LEGEND :
- MMO ANODES
  - TRANSFORMER RECTIFIER
  - ANODE SPLITTING JUNCTION BOX
  - NEGATIVE JUNCTION BOX
  - POSITIVE JUNCTION BOX
  - TEST STATION WITH RE & COUPON
  - 35mm<sup>2</sup> XLPE/PVC POSITIVE FEEDER
  - 35mm<sup>2</sup> XLPE/PVC NEGATIVE FEEDER
  - BLACK CABLE
  - 16mm<sup>2</sup> XLPE/PVC ANODE TAIL BLACK CABLE
  - 16mm<sup>2</sup> XLPE/PVC MONITORING BLACK CABLE
  - 10mm<sup>2</sup> XLPE/PVC REFERENCE ELECTRODE
  - RED CABLE
  - 10mm<sup>2</sup> XLPE/PVC POLARISATION COUPON
  - BLUE CABLE
  - MG - MAGNESIUM ANODE

DOCUMENT NUMBER	DESCRIPTION
1251-100-030-099-0001	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0002	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0003	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0004	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0005	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0006	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0007	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0008	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0009	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0010	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL

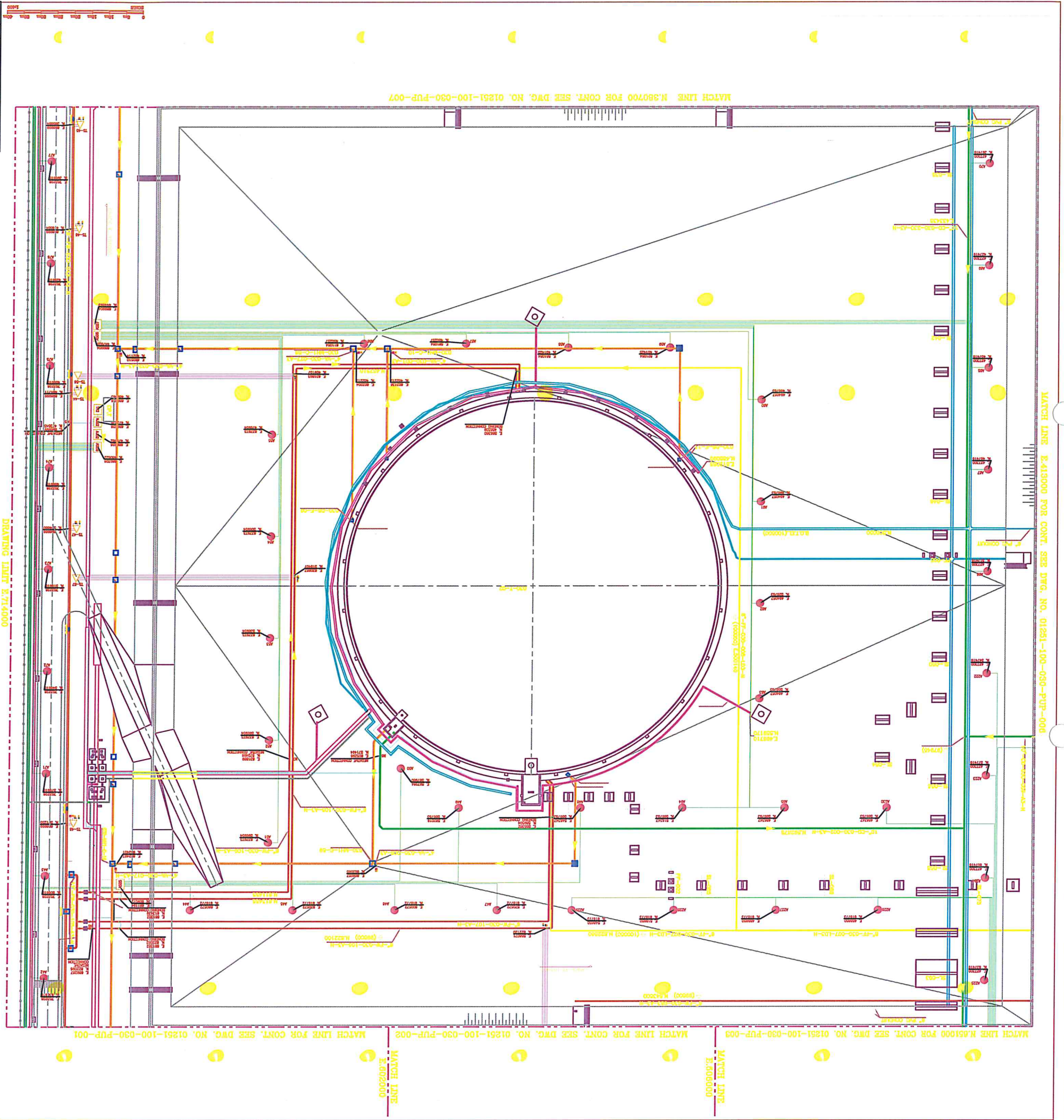
SUPPLIER DOCUMENT REVIEW		PROJECT		TITLE		NEW CRUDE OIL TANK FARU PROJECT		PACKAGE DESCRIPTION		EQUIPMENT TAG		CODE D99		SHEET 5 OF 8		NAME		DOCUMENT NUMBER		REVISION		DATE:		SIGNATURE	
1. Work may proceed.		2. Work may proceed in accordance with communication.		3. Work may proceed in accordance with communication.		4. Work may proceed in accordance with communication.		5. Work may proceed in accordance with communication.		6. Work may proceed in accordance with communication.		7. Work may proceed in accordance with communication.		8. Work may proceed in accordance with communication.		9. Work may proceed in accordance with communication.		10. Work may proceed in accordance with communication.		11. Work may proceed in accordance with communication.		12. Work may proceed in accordance with communication.		13. Work may proceed in accordance with communication.	

PROJECT	TITLE	PACKAGE	EQUIPMENT	CODE	IDENTIFIER	DOCUMENT NUMBER	REVISION
NEW CRUDE OIL TANK	FARM PROJECT	CATHODIC PROTECTION	NEW CRUDE OIL TANK	NEW CRUDE OIL TANK	NEW CRUDE OIL TANK	NEW CRUDE OIL TANK	NEW CRUDE OIL TANK

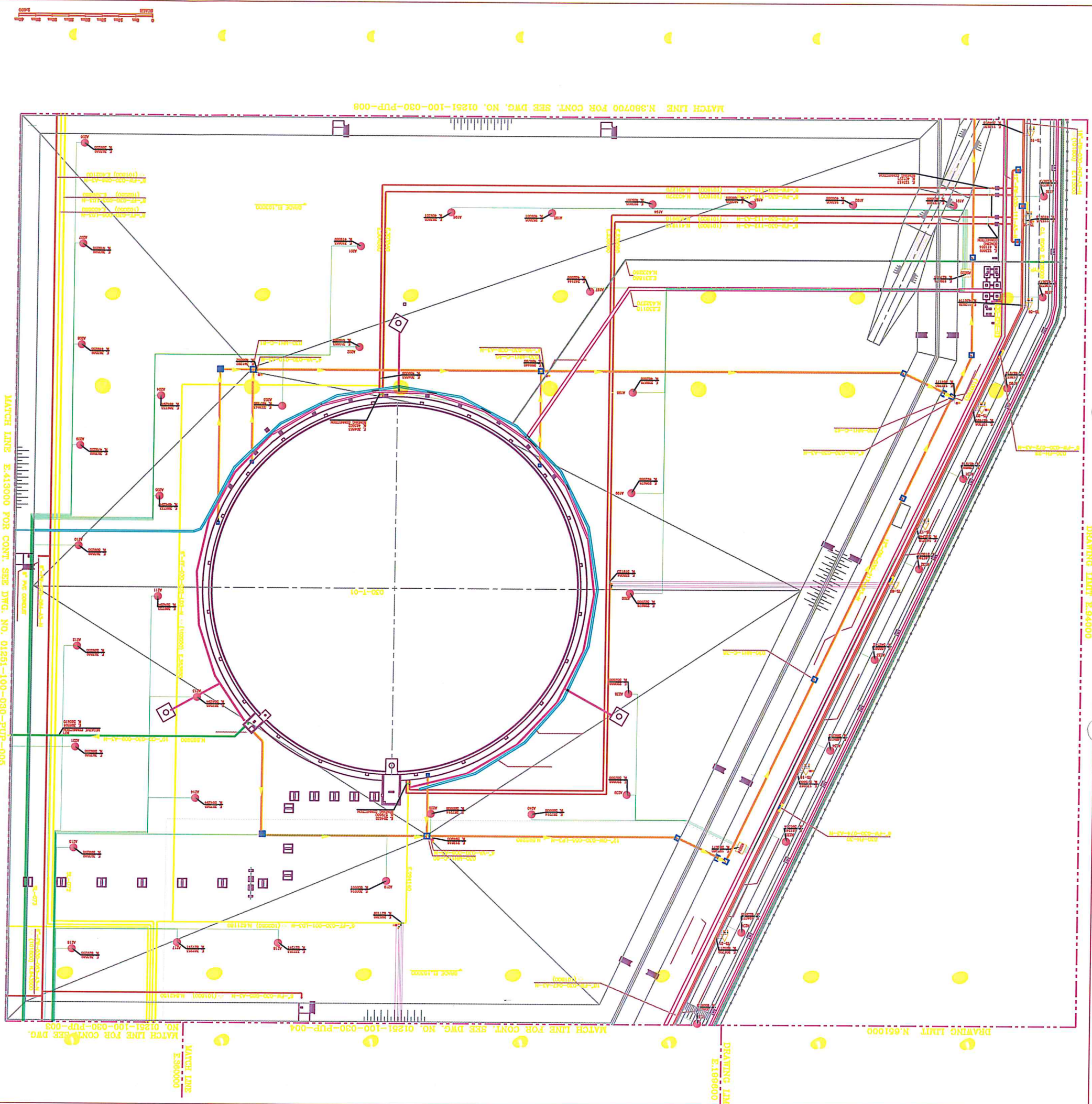

NO.	REVISION	DATE	BY	CHKD.	APPD.
1	1	05/08	0005	0005	0005
2	2	05/08	0005	0005	0005
3	3	05/08	0005	0005	0005
4	4	05/08	0005	0005	0005
5	5	05/08	0005	0005	0005
6	6	05/08	0005	0005	0005
7	7	05/08	0005	0005	0005
8	8	05/08	0005	0005	0005



DOCUMENT NUMBER	DESCRIPTION
1251-100-030-099-0001	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0002	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0003	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0004	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0005	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0006	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0007	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0008	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0009	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
1251-100-030-099-0010	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL









AD SIZE: 1189 X 841

1251-100-S30-D99-000507/088

EGPC

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EGPC CRUDE OIL TANK FARM  
AGR00D AREA (MODULE-1) - IN-PLANT  
PIPING LAYOUT - AGR00D-GPC-030

1251-100-S30-D99-000507/088

DATE:	1251-100-S30-D99-0005
NAME:	1251-100-S30-D99-0005
REVISION:	8
DOCUMENT NUMBER:	0005
DEPARTMENT:	D99
EQUIPMENT:	AGR00D
PACKAGE DESCRIPTION:	CATHODIC PROTECTION
PROJECT TITLE:	NEW CRUDE OIL TANK
SUPPLIER DOCUMENT REVIEW:	

EGPC

EGPC

EGPC CRUDE OIL TANK FARM  
AGR00D AREA (MODULE-1) - IN-PLANT  
PIPING LAYOUT - AGR00D-GPC-030

1251-100-S30-D99-000507/088

KEY PLAN

LEGEND

MG - MAGNESIUM ANODE

BLUE CABLE

10mm<sup>2</sup> XLPE/PVC POLARISATION COUPON

RED CABLE

10mm<sup>2</sup> XLPE/PVC REFERENCE ELECTRODE

16mm<sup>2</sup> XLPE/PVC MONITORING BLACK CABLE

16mm<sup>2</sup> XLPE/PVC ANODE TAIL BLACK CABLE

35mm<sup>2</sup> XLPE/PVC NEGATIVE FEEDER

35mm<sup>2</sup> XLPE/PVC POSITIVE FEEDER

TEST STATION WITH RE & COUPON

POSITIVE JUNCTION BOX

NEGATIVE JUNCTION BOX

ANODE SPLITTING JUNCTION BOX

TRANSFORMER RECTIFIER

MMO ANODES

LEGEND

1. THIS DRAWING HAS BEEN ISSUED FOR CATHODIC PROTECTION EQUIPMENT

2. ANY OTHER INFORMATION PLEASE REFER TO SUPPLIER ISSUED DRAWING

3. CATHODIC PROTECTION EQUIPMENT SHALL BE INSTALLED IN AN UNCLASHED AREA, INFORMATION

4. RECORDING AREA CLASSIFICATION IS GIVEN WITHIN DRAWING NUMBER

5. A MAXIMUM ALLOWABLE VARIATION FOR LOCATION OF THE ANODE AND JUNCTION

6. IN CASE OF ANY CHANGE, REFERENCE MUST BE MADE TO THE CATHODIC

7. PROTECTION DRAWING FOR RESOLUTION.

8. ALL INSTALLATION WORKS SHALL CONSIDER INSTALLATION MANUAL ISSUED

9. BY COMPANY.

NOTES

1251-100-S30-D99-0001

INSTALLATION, COMMISSIONING, OPERATIONS

1251-100-S30-D99-0002

DETAIL DESIGN REPORT AGR00D GPC 030

1251-100-S30-D99-0003

CATHODIC PROTECTION EQUIPMENT DATA SHEETS

1251-100-S30-D99-0004

JUNCTION BOX GENERAL ARRANGEMENT

1251-100-S30-D99-0005

TRANSFORMER RECTIFIER GENERAL ARRANGEMENT

1251-100-S30-D99-0006

ANODE INSTALLATION DRAWING

1251-100-S30-D99-0007

INSTALLATION MANUAL

REFERENCES

1251-100-S30-D99-0001

DESCRIPTION

1251-100-S30-D99-0002

DESCRIPTION

1251-100-S30-D99-0003

DESCRIPTION

1251-100-S30-D99-0004

DESCRIPTION

1251-100-S30-D99-0005

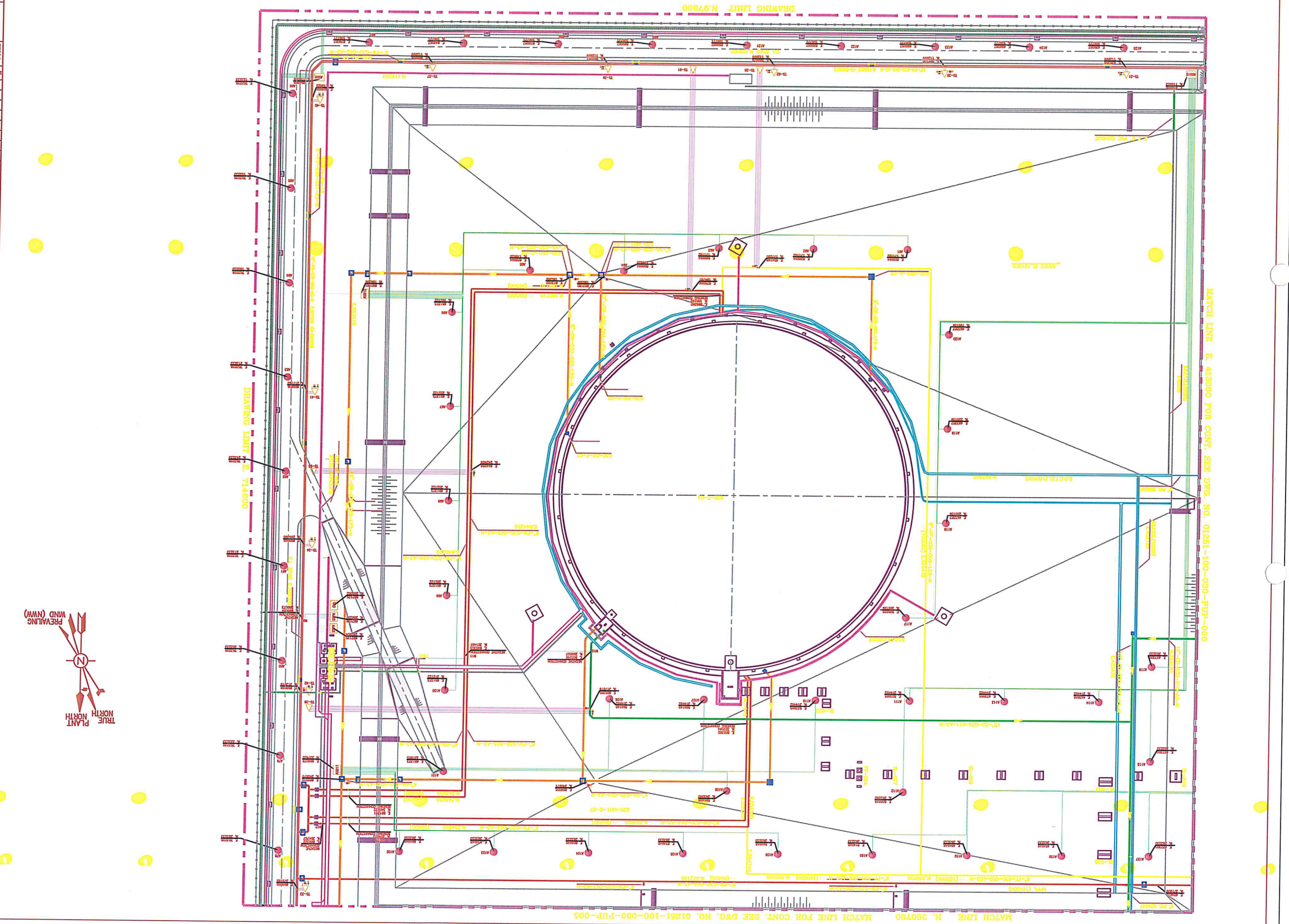
DESCRIPTION

1251-100-S30-D99-0006

DESCRIPTION

1251-100-S30-D99-0007

DESCRIPTION





AD SIZE: 1100 X 841

08/08

1251-100-S30-D99-0005

EGPC

EGPC

NO.	DESCRIPTION	DATE	BY	CHKD.
1	ISSUED FOR APPROVAL	08/08	...	...
2	ISSUED FOR APPROVAL	...	...	...
3	ISSUED FOR APPROVAL	...	...	...
4	ISSUED FOR APPROVAL	...	...	...
5	ISSUED FOR APPROVAL	...	...	...
6	ISSUED FOR APPROVAL	...	...	...
7	ISSUED FOR APPROVAL	...	...	...
8	ISSUED FOR APPROVAL	...	...	...

KEY PLAN

LEGEND

- MC - MAGNESIUM ANODE
- BLUE CABLE
- 10mm<sup>2</sup> XLPE/PVC POLARISATION COUPON
- RED CABLE
- 10mm<sup>2</sup> XLPE/PVC REFERENCE ELECTRODE
- 16mm<sup>2</sup> XLPE/PVC MONITORING BLACK CABLE
- 16mm<sup>2</sup> XLPE/PVC ANODE TAIL BLACK CABLE
- 35mm<sup>2</sup> XLPE/PVC NEGATIVE FEEDER
- 35mm<sup>2</sup> XLPE/PVC POSITIVE FEEDER
- TEST STATION WITH RE & COUPON
- POSITIVE JUNCTION BOX
- NEGATIVE JUNCTION BOX
- ANODE SPLITTING JUNCTION BOX
- TRANSFORMER RECTIFIER
- MNO ANODES

NOTES

1. THIS DRAWING HAS BEEN ISSUED FOR CATHODIC PROTECTION EQUIPMENT INSTALLATION PURPOSES ONLY BASED ON DWG(1251-100-S30-D99-0005) AND ALL OTHER INFORMATION PLEASE REFER TO DWG(1251-100-S30-D99-0005) FOR ANY OTHER INFORMATION.

2. THE COORDINATES OF THE TANK AND ALL EQUIPMENT SHALL BE INSTALLED IN AN UNCLASSIFIED AREA, INFORMATION RECORDING AREA CLASSIFICATION IS GIVEN WITHIN DRAWING NUMBER (1251-100-S30-D99-0005).

3. A MAGNETIC ALLOWABLE VARIATION FOR LOCATION OF THE TANK AND JUNCTION BOXES IS (10 METERS).

4. IN CASE OF ANY CONFLICT PLEASE INQUIRE TO THE CATHODIC PROTECTION DESIGNER FOR RESOLUTION.

5. ALL INSTALLATION WORKS SHALL CONSIDER INSTALLATION MANUAL ISSUED BY CORROPRO.

REFERENCES

DOCUMENT NUMBER	DESCRIPTION
1251-100-S30-D99-0004	INSTALLATION DETAILS
1251-100-S30-D99-0004	ANODE INSTALLATION DRAWING
1251-100-S30-D99-0004	TRANSFORMER RECTIFIER GENERAL ARRANGEMENT
1251-100-S30-D99-0004	JUNCTION BOX GENERAL ARRANGEMENT
1251-100-S30-D99-0004	CATHODIC PROTECTION EQUIPMENT DATA SHEETS
1251-100-S30-D99-0004	DETAIL DESIGN REPORT AGROOD GPC 030
1251-100-S30-D99-0001	AND MAINTENANCE MANUAL

DATE: 08/08

1251-100-S30-D99-0005

8

NAME: ...

DESIGNER: ...

DATE: ...

REVISION: ...

PROJECT: ...

TITLE: ...

PACKAGE DESCRIPTION: ...

CATHODIC PROTECTION: ...

ANODES: ...

TEST STATION: ...

LEGEND: ...

LEGEND

- MC - MAGNESIUM ANODE
- BLUE CABLE
- 10mm<sup>2</sup> XLPE/PVC POLARISATION COUPON
- RED CABLE
- 10mm<sup>2</sup> XLPE/PVC REFERENCE ELECTRODE
- 16mm<sup>2</sup> XLPE/PVC MONITORING BLACK CABLE
- 16mm<sup>2</sup> XLPE/PVC ANODE TAIL BLACK CABLE
- 35mm<sup>2</sup> XLPE/PVC NEGATIVE FEEDER
- 35mm<sup>2</sup> XLPE/PVC POSITIVE FEEDER
- TEST STATION WITH RE & COUPON
- POSITIVE JUNCTION BOX
- NEGATIVE JUNCTION BOX
- ANODE SPLITTING JUNCTION BOX
- TRANSFORMER RECTIFIER
- MNO ANODES

NOTES

1. THIS DRAWING HAS BEEN ISSUED FOR CATHODIC PROTECTION EQUIPMENT INSTALLATION PURPOSES ONLY BASED ON DWG(1251-100-S30-D99-0005) AND ALL OTHER INFORMATION PLEASE REFER TO DWG(1251-100-S30-D99-0005) FOR ANY OTHER INFORMATION.

2. THE COORDINATES OF THE TANK AND ALL EQUIPMENT SHALL BE INSTALLED IN AN UNCLASSIFIED AREA, INFORMATION RECORDING AREA CLASSIFICATION IS GIVEN WITHIN DRAWING NUMBER (1251-100-S30-D99-0005).

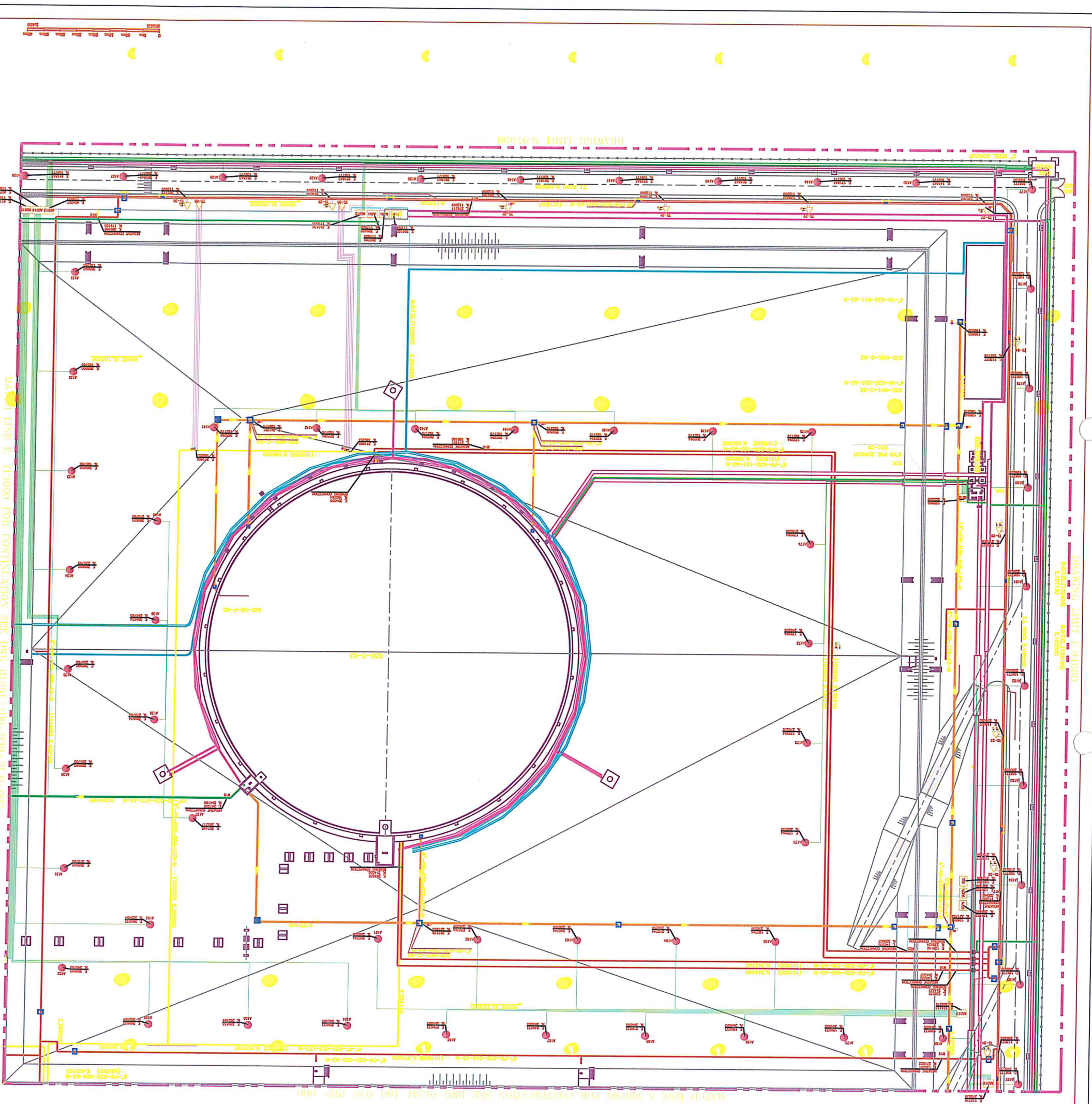
3. A MAGNETIC ALLOWABLE VARIATION FOR LOCATION OF THE TANK AND JUNCTION BOXES IS (10 METERS).

4. IN CASE OF ANY CONFLICT PLEASE INQUIRE TO THE CATHODIC PROTECTION DESIGNER FOR RESOLUTION.

5. ALL INSTALLATION WORKS SHALL CONSIDER INSTALLATION MANUAL ISSUED BY CORROPRO.

REFERENCES

DOCUMENT NUMBER	DESCRIPTION
1251-100-S30-D99-0004	INSTALLATION DETAILS
1251-100-S30-D99-0004	ANODE INSTALLATION DRAWING
1251-100-S30-D99-0004	TRANSFORMER RECTIFIER GENERAL ARRANGEMENT
1251-100-S30-D99-0004	JUNCTION BOX GENERAL ARRANGEMENT
1251-100-S30-D99-0004	CATHODIC PROTECTION EQUIPMENT DATA SHEETS
1251-100-S30-D99-0004	DETAIL DESIGN REPORT AGROOD GPC 030
1251-100-S30-D99-0001	AND MAINTENANCE MANUAL





400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-003

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-003

35mm<sup>2</sup> XLPE/PVC CABLE

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-003

AG030-ASB-009

AG030-ASB-010

AG030-ASB-011

AG030-ASB-012

35mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

6"-FW-030-056-A3-N  
10"-CD-030-011-A3-N  
6"-FW-030-096-A3-N  
6"-FW-030-099-A3-N

MMO ANODE 81  
MMO ANODE 82  
MMO ANODE 83  
MMO ANODE 84  
MMO ANODE 85  
MMO ANODE 86  
MMO ANODE 87  
MMO ANODE 88  
MMO ANODE 89  
MMO ANODE 90

MMO ANODE 91  
MMO ANODE 92  
MMO ANODE 93  
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MMO ANODE 101  
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MMO ANODE 113  
MMO ANODE 114  
MMO ANODE 115  
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MMO ANODE 117  
MMO ANODE 118  
MMO ANODE 119  
MMO ANODE 120

#### REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

#### SUPPLIER DOCUMENT REVIEW

- ☐ 1. Work may proceed.
- ☐ 2. Revise and resubmit in accordance with comments, work may proceed subject to incorporation of changes indicated
- ☐ 3. Revise and resubmit.(major comments)work may not proceed
- ☐ 4. Rejected.(reason to be specified on the document).
- ☐ 5. Hold for a specific reason(to be specified on the document).

PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.

NAME

SIGNATURE

DATE:

PROJECT  
TITLE

PACKAGE  
DESCRIPTION

EQUIPMANT  
TAG

CODE  
IDENTIFIER

DOCUMENT NUMBER

REVISION

NEW CRUDE OIL TANK  
FARM PROJECT

CATHODIC PROTECTION

E10

SHEET 3 OF 7

1251-100-S30-E10-0005

1

No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
1	ISSUED FOR APPROVAL	N/A	PB	DC	14/01/21
0	ISSUED FOR REVIEW	N/A	PB	DC	23/10/20

**corrpro**<sup>®</sup>  
An Aegion™ Company

Adam Street,Bowesfield Lane,  
Stockton-on-Tees,Cleveland TS18 3HQ.  
Tel: (01642) 614106. Fax: 614100 Telex: 587388

Information shown on this drawing is confidential and must not be copied or conveyed to third parties without the express permission of Corpro Companies Europe Ltd.  
Certain items shown on this drawing are subject to worldwide patent applications.

ENPPI		NEW CRUDE OIL TANK FARM PROJECT	
SINGLE LINE DIAGRAM AGROOD-GPC-030			
Drawn PB	Date 23/10/2020	Checked DC	Date 23/10/2020
Scale NTS	DRG. No. 34501020-DWG-030		Issue No. 1



400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-004

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-004

35mm<sup>2</sup> XLPE/PVC CABLE

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-004

AG030-ASB-013

AG030-ASB-014

AG030-ASB-015

AG030-ASB-016

35mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

18"-FW-030-045-A3-N  
6"-FW-030-102-A3-N  
10"-CD-030-010-A3-N  
8"-FW-030-086-A3-N

MMO ANODE 121  
MMO ANODE 122  
MMO ANODE 123  
MMO ANODE 124  
MMO ANODE 125  
MMO ANODE 126  
MMO ANODE 127  
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MMO ANODE 158  
MMO ANODE 159  
MMO ANODE 160

## REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

## SUPPLIER DOUMENT REVIEW

- ☐ 1. Work may proceed.
- ☐ 2. Revise and resubmit in accordance with comments,work may proceed subject to incorporation of changes indicated
- ☐ 3. Revise and resubmit.(major comments)work may not proceed
- ☐ 4. Rejected.(reason to be specified on the document).
- ☐ 5. Hold for a specific reason(to be specified on the document).

PERMISSION TO PROCEED DOES NOT CONSTITUTE  
ACCEPTANCE OR APPROVAL OF DESIGN DETAILS,  
CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS  
DEVELOPED OR SELECTED BY SUPPLIER FROM FULL  
COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.

NAME

SIGNATURE

DATE:

PROJECT  
TITLE

PACKAGE  
DESCRIPTION

EQUIPMANT  
TAG

CODE  
IDENTIFIER

DOCUMENT NUMBER

REVISION

NEW CRUDE OIL TANK  
FARM PROJECT

CATHODIC PROTECTION

E10

SHEET 4 OF 7

1251-100-S30-E10-0005

1

No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
1	ISSUED FOR APPROVAL	N/A	PB	DC	14/01/21
0	ISSUED FOR REVIEW	N/A	PB	DC	23/10/20

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Companies Europe Ltd.  
Certain items shown on this drawing are  
subject to worldwide patent applications.

ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-GPC-030					
Drawn	PB	Date	23/10/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWG-030		Issue No.
				23/10/2020	
				1	







400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-006

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-006

35mm<sup>2</sup> XLPE/PVC CABLE

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-006

10"-CD-030-009-A3-N  
4"-FF-030-003-LD3-N  
8"-FW-030-086-A3-N  
6"-FW-030-078-A3-N

16mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-021

MMO ANODE 201  
MMO ANODE 202  
MMO ANODE 203  
MMO ANODE 204  
MMO ANODE 205  
MMO ANODE 206  
MMO ANODE 207  
MMO ANODE 208  
MMO ANODE 209  
MMO ANODE 210

16mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-022

MMO ANODE 211  
MMO ANODE 212  
MMO ANODE 213  
MMO ANODE 214  
MMO ANODE 215  
MMO ANODE 216  
MMO ANODE 217  
MMO ANODE 218  
MMO ANODE 219  
MMO ANODE 220

16mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-023

MMO ANODE 221  
MMO ANODE 222  
MMO ANODE 223  
MMO ANODE 224  
MMO ANODE 225  
MMO ANODE 226  
MMO ANODE 227  
MMO ANODE 228  
MMO ANODE 229  
MMO ANODE 230

16mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-024

MMO ANODE 231  
MMO ANODE 232  
MMO ANODE 233  
MMO ANODE 234  
MMO ANODE 235  
MMO ANODE 236  
MMO ANODE 237  
MMO ANODE 238  
MMO ANODE 239  
MMO ANODE 240

REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030  
1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030  
1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

SIGNATURE		DATE:		1251-100-S30-E10-0005		1	
NAME				DOCUMENT NUMBER			
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1. Work may proceed.				PROJECT TITLE		NEW CRUDE OIL TANK	
2. Revise and resubmit in accordance with comments,work of changes indicated				PACKAGE DESCRIPTION		CATHODIC PROTECTION	
3. Revise and resubmit.(major comments)work may not proceed				EQUIPMENT TAG			
4. Rejected.(reason to be specified on the document).				REVISION		SHEET 6 OF 7	
5. Hold for a specific reason(to be specified on the document).				REVISION		1	
Drawn		PB		Scale		NTS	
Date		23/10/2020		DRG. No.		34501020-DWG-030	
Checked		DC		Issue No.		1	
Date		23/10/2020					
SINGLE LINE DIAGRAM							
AGROOD-GPC-030							
ENPPI							
NEW CRUDE OIL TANK FARM PROJECT							
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subject to worldwide patent applications.							
No.							
DESCRIPTION							
DCR No.							
BY							
CHECK							
DATE							
1							
ISSUED FOR APPROVAL							
N/A							
PB							
DC							
14/01/21							
0							
ISSUED FOR REVIEW							
N/A							
PB							
DC							
23/10/20							



35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-101-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-096-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-096-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-004-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-004-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-004-LD3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-102-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-102-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-094-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-004-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-004-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	8"-FF-030-005-LD3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-102-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-102-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-093-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-101-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-101-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-094-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-003-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-003-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-093-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-099-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-099-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-107-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-003-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-003-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-007-LD3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-099-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-099-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-106-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-100-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-100-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-106-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-002-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-002-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-108-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-114-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-114-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-108-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-002-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-002-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-008-LD3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-115-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-115-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-109-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-001-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-001-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-109-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-112-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-112-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-118-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-113-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-113-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-153-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-001-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-001-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	2"-WP-030-011-LD3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-095-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-095-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	8"-SW-030-01
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-006-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-006-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	8"-SW-030-01
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-096-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FW-030-096-A3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-CD-030-215-A3-N
35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-006-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	6"-FF-030-006-LD3-N	35mm <sup>2</sup> XLPE/PVC BONDING CABLE	4"-FW-030-142-LD3-N

REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

SIGNATURE		DATE:	
NAME			
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.			
<input type="checkbox"/> 1. Work may proceed. <input type="checkbox"/> 2. Revise and resubmit in accordance with comments,work of changes indicated <input type="checkbox"/> 3. Revise and resubmit.(major comments)work may not proceed <input type="checkbox"/> 4. Rejected.(reason to be specified on the document). <input type="checkbox"/> 5. Hold for a specific reason(to be specified on the document).		EQUIPAMENT	
TAG		CODE IDENTIFIER	
E10		SHEET 7 OF 7	
DOCUMENT NUMBER		REVISION	
1251-100-S30-E10-0005		1	
PROJECT TITLE NEW CRUDE OIL TANK			
PACKAGE DESCRIPTION CATHODIC PROTECTION			
PROJECT TITLE FARM PROJECT			
ENPI SINGLE LINE DIAGRAM AGR00D-GPC-030			
Drawn		Scale	
PB		NTS	
Date 23/10/2020		DRG. No. 34501020-DWG-030	
Checked		DC	
Date 23/10/2020		Issue No. 1	

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subject to worldwide patent applications.







400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-005

AG030-ASB-006

AG030-ASB-007

AG030-ASB-008

35mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

6"-FW-030-054-A3-N  
10"-CD-030-002-A3-N  
6"-FW-030-109-A3-N  
6"-FW-030-106-A3-N

MMO ANODE 41  
MMO ANODE 42  
MMO ANODE 43  
MMO ANODE 44  
MMO ANODE 45  
MMO ANODE 46  
MMO ANODE 47  
MMO ANODE 48  
MMO ANODE 49  
MMO ANODE 50

MMO ANODE 51  
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MMO ANODE 75  
MMO ANODE 76  
MMO ANODE 77  
MMO ANODE 78  
MMO ANODE 79  
MMO ANODE 80

# REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

## SUPPLIER DOUMENT REVIEW

- ☐ 1. Work may proceed.
- ☐ 2. Revise and resubmit in accordance with comments,work may proceed subject to incorporation of changes indicated
- ☐ 3. Revise and resubmit.(major comments)work may not proceed
- ☐ 4. Rejected.(reason to be specified on the document).
- ☐ 5. Hold for a specific reason(to be specified on the document).

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NAME

SIGNATURE

DATE:

PROJECT  
TITLE

NEW CRUDE OIL TANK  
FARM PROJECT

PACKAGE  
DESCRIPTION

CATHODIC PROTECTION

EQUIPMANT  
TAG

CODE  
IDENTIFIER

E10

SHEET 2 OF 7

DOCUMENT NUMBER

1251-100-S30-E10-0005

REVISION

1

1	ISSUED FOR APPROVAL	N/A	PB	DC	14/01/21
0	ISSUED FOR REVIEW	N/A	PB	DC	23/10/20

No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
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ENPPI	NEW CRUDE OIL TANK FARM PROJECT
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SINGLE LINE DIAGRAM  
AGROOD-GPC-030

Drawn	PB	Date	23/10/2020	Checked	DC	Date	23/10/2020
Scale	NTS	DRG. No.	24501000	Issue No.			



400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-003

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-003

35mm<sup>2</sup> XLPE/PVC CABLE

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-003

AG030-ASB-009

AG030-ASB-010

AG030-ASB-011

AG030-ASB-012

35mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

6"-FW-030-056-A3-N  
10"-CD-030-011-A3-N  
6"-FW-030-096-A3-N  
6"-FW-030-099-A3-N

MMO ANODE 81  
MMO ANODE 82  
MMO ANODE 83  
MMO ANODE 84  
MMO ANODE 85  
MMO ANODE 86  
MMO ANODE 87  
MMO ANODE 88  
MMO ANODE 89  
MMO ANODE 90

MMO ANODE 91  
MMO ANODE 92  
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MMO ANODE 95  
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MMO ANODE 98  
MMO ANODE 99  
MMO ANODE 100

MMO ANODE 101  
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MMO ANODE 112  
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MMO ANODE 114  
MMO ANODE 115  
MMO ANODE 116  
MMO ANODE 117  
MMO ANODE 118  
MMO ANODE 119  
MMO ANODE 120

# REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

## SUPPLIER DOUMENT REVIEW

- ☐ 1. Work may proceed.
- ☐ 2. Revise and resubmit in accordance with comments,work may proceed subject to incorporation of changes indicated
- ☐ 3. Revise and resubmit.(major comments)work may not proceed
- ☐ 4. Rejected.(reason to be specified on the document).
- ☐ 5. Hold for a specific reason(to be specified on the document).

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NAME

SIGNATURE

DATE:

PROJECT  
TITLE

NEW CRUDE OIL TANK  
FARM PROJECT

PACKAGE  
DESCRIPTION

CATHODIC PROTECTION

EQUIPMANT  
TAG

CODE  
IDENTIFIER

E10

SHEET 3 OF 7

DOCUMENT NUMBER

1251-100-S30-E10-0005

REVISION

1

1	ISSUED FOR APPROVAL	N/A	PB	DC	14/01/21
0	ISSUED FOR REVIEW	N/A	PB	DC	23/10/20

No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
-----	-------------	---------	----	-------	------

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ENPPI	NEW CRUDE OIL TANK FARM PROJECT
-------	---------------------------------

SINGLE LINE DIAGRAM  
AGROOD-GPC-030

Drawn	PB	Date	23/10/2020	Checked	DC	Date	23/10/2020
Scale	NTS	DRG. No.	24501000	Issue No.			



400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-004

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-004

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-004

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-013

AG030-ASB-014

AG030-ASB-015

AG030-ASB-016

35mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

18"-FW-030-045-A3-N  
6"-FW-030-102-A3-N  
10"-CD-030-010-A3-N  
8"-FW-030-086-A3-N

MMO ANODE 121  
MMO ANODE 122  
MMO ANODE 123  
MMO ANODE 124  
MMO ANODE 125  
MMO ANODE 126  
MMO ANODE 127  
MMO ANODE 128  
MMO ANODE 129  
MMO ANODE 130

MMO ANODE 131  
MMO ANODE 132  
MMO ANODE 133  
MMO ANODE 134  
MMO ANODE 135  
MMO ANODE 136  
MMO ANODE 137  
MMO ANODE 138  
MMO ANODE 139  
MMO ANODE 140

MMO ANODE 141  
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MMO ANODE 151  
MMO ANODE 152  
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MMO ANODE 154  
MMO ANODE 155  
MMO ANODE 156  
MMO ANODE 157  
MMO ANODE 158  
MMO ANODE 159  
MMO ANODE 160

## REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

SUPPLIER DOUMENT REVIEW		PROJECT TITLE		NEW CRUDE OIL TANK FARM PROJECT	
<input type="checkbox"/> 1. Work may proceed.		PACKAGE DESCRIPTION		CATHODIC PROTECTION	
<input type="checkbox"/> 2. Revise and resubmit in accordance with comments,work may proceed subject to incorporation of changes indicated		EQUIPMANT TAG			
<input type="checkbox"/> 3. Revise and resubmit.(major comments)work may not proceed		CODE IDENTIFIER		E10	
<input type="checkbox"/> 4. Rejected.(reason to be specified on the document).		SHEET		4 OF 7	
<input type="checkbox"/> 5. Hold for a specific reason(to be specified on the document).		DOCUMENT NUMBER		REVISION	
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.		1251-100-S30-E10-0005		1	
NAME		DATE:			
SIGNATURE					

1	ISSUED FOR APPROVAL	N/A	PB	DC	14/01/21
0	ISSUED FOR REVIEW	N/A	PB	DC	23/10/20
No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
<b>Corrpro</b> An Aegion™ Company					
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ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-GPC-030					
Drawn	PB	Date	23/10/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWG-030	Issue No.	1



400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-005

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-005

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-005

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-017

AG030-ASB-018

AG030-ASB-019

AG030-ASB-020

35mm<sup>2</sup> XLPE/PVC CABLE

6"-FW-030-070-A3-N  
6"-FW-030-099-A3-N  
8"-FW-030-081-A3-N  
8"-FW-030-102-A3-N

16mm<sup>2</sup> XLPE/PVC CABLE

MMO ANODE 161  
MMO ANODE 162  
MMO ANODE 163  
MMO ANODE 164  
MMO ANODE 165  
MMO ANODE 166  
MMO ANODE 167  
MMO ANODE 168  
MMO ANODE 169  
MMO ANODE 170

16mm<sup>2</sup> XLPE/PVC CABLE

MMO ANODE 171  
MMO ANODE 172  
MMO ANODE 173  
MMO ANODE 174  
MMO ANODE 175  
MMO ANODE 176  
MMO ANODE 177  
MMO ANODE 178  
MMO ANODE 179  
MMO ANODE 180

16mm<sup>2</sup> XLPE/PVC CABLE

MMO ANODE 181  
MMO ANODE 182  
MMO ANODE 183  
MMO ANODE 184  
MMO ANODE 185  
MMO ANODE 186  
MMO ANODE 187  
MMO ANODE 188  
MMO ANODE 189  
MMO ANODE 190

16mm<sup>2</sup> XLPE/PVC CABLE

MMO ANODE 191  
MMO ANODE 192  
MMO ANODE 193  
MMO ANODE 194  
MMO ANODE 195  
MMO ANODE 196  
MMO ANODE 197  
MMO ANODE 198  
MMO ANODE 199  
MMO ANODE 200

#### REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

SUPPLIER DOUMENT REVIEW		PROJECT TITLE		NEW CRUDE OIL TANK FARM PROJECT	
<input type="checkbox"/> 1. Work may proceed.		PACKAGE DESCRIPTION		CATHODIC PROTECTION	
<input type="checkbox"/> 2. Revise and resubmit, in accordance with comments, work may proceed subject to incorporation of changes indicated		EQUIPMANT TAG			
<input type="checkbox"/> 3. Revise and resubmit.(major comments)work may not proceed		CODE IDENTIFIER		E10	
<input type="checkbox"/> 4. Rejected.(reason to be specified on the document).		SHEET		5 OF 7	
<input type="checkbox"/> 5. Hold for a specific reason(to be specified on the document).		DOCUMENT NUMBER		REVISION	
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.		1251-100-S30-E10-0005		1	
NAME		DATE:			
SIGNATURE					

1	ISSUED FOR APPROVAL	N/A	PB	DC	14/01/21
0	ISSUED FOR REVIEW	N/A	PB	DC	23/10/20
No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
<b>corrpro</b> An Aegion™ Company					
Adam Street,Bowesfield Lane, Stockton-on-Tees,Cleveland TS18 3HQ. Tel: (01642) 614106. Fax: 614100 Telex: 587388					
Information shown on this drawing is confidential and must not be copied or conveyed to third parties without the express permission of Corpro Companies Europe Ltd. Certain items shown on this drawing are subject to worldwide patent applications.					
ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-GPC-030					
Drawn	PB	Date	23/10/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWG-030	Issue No.	1



400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-006

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-006

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-006

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-021

AG030-ASB-022

AG030-ASB-023

AG030-ASB-024

35mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

10"-CD-030-009-A3-N  
4"-FF-030-003-LD3-N  
8"-FW-030-086-A3-N  
6"-FW-030-078-A3-N

MMO ANODE 201  
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MMO ANODE 239  
MMO ANODE 240

## REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

SUPPLIER DOUMENT REVIEW		PROJECT TITLE		NEW CRUDE OIL TANK FARM PROJECT	
<input type="checkbox"/> 1. Work may proceed.		PACKAGE DESCRIPTION		CATHODIC PROTECTION	
<input type="checkbox"/> 2. Revise and resubmit in accordance with comments,work may proceed subject to incorporation of changes indicated		EQUIPMANT TAG			
<input type="checkbox"/> 3. Revise and resubmit.(major comments)work may not proceed		CODE IDENTIFIER		E10 SHEET 6 OF 7	
<input type="checkbox"/> 4. Rejected.(reason to be specified on the document).		DOCUMENT NUMBER		1251-100-S30-E10-0005	
<input type="checkbox"/> 5. Hold for a specific reason(to be specified on the document).		REVISION		1	
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.					
NAME					
SIGNATURE		DATE:			

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<b>Corrpro</b> An Aegion™ Company					
Adam Street,Bowesfield Lane, Stockton-on-Tees,Cleveland TS18 3HQ. Tel: (01642) 614106. Fax: 614100 Telex: 587388					
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ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-GPC-030					
Drawn	PB	Date	23/10/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWC-030	Issue No.	1
		Date	23/10/2020		



6"-FW-030-096-A3-N  
6"-FW-030-095-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-094-A3-N  
8"-FF-030-005-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-093-A3-N  
8"-FF-030-005-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-093-A3-N  
6"-FW-030-094-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-107-A3-N  
6"-FF-030-007-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-106-A3-N  
6"-FF-030-007-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-106-A3-N  
6"-FW-030-107-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
8"-FW-030-108-A3-N  
6"-FF-030-008-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-109-A3-N  
6"-FF-030-008-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-109-A3-N  
6"-FW-030-108-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-118-A3-N  
6"-FW-030-153-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
2"-WP-030-011-LD3-N  
8"-SW-030-01  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
8"-SW-030-01  
8"-SW-030-02  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-OD-030-215-A3-N  
4"-FW-030-142-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE

6"-FW-030-101-A3-N  
6"-FF-030-004-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-102-A3-N  
6"-FF-030-004-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-102-A3-N  
6"-FW-030-101-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-100-A3-N  
6"-FF-030-003-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-099-A3-N  
6"-FF-030-003-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-099-A3-N  
6"-FW-030-100-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-114-A3-N  
6"-FF-030-002-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-114-A3-N  
6"-FW-030-115-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-115-A3-N  
6"-FF-030-002-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-112-A3-N  
6"-FF-030-001-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
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6"-FW-030-113-A3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-113-A3-N  
6"-FW-030-001-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-113-A3-N  
6"-FW-030-095-A3-N  
6"-FF-030-006-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE  
6"-FW-030-096-A3-N  
6"-FF-030-006-LD3-N  
35mm<sup>2</sup> XLPE/PVC BONDING CABLE

# REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

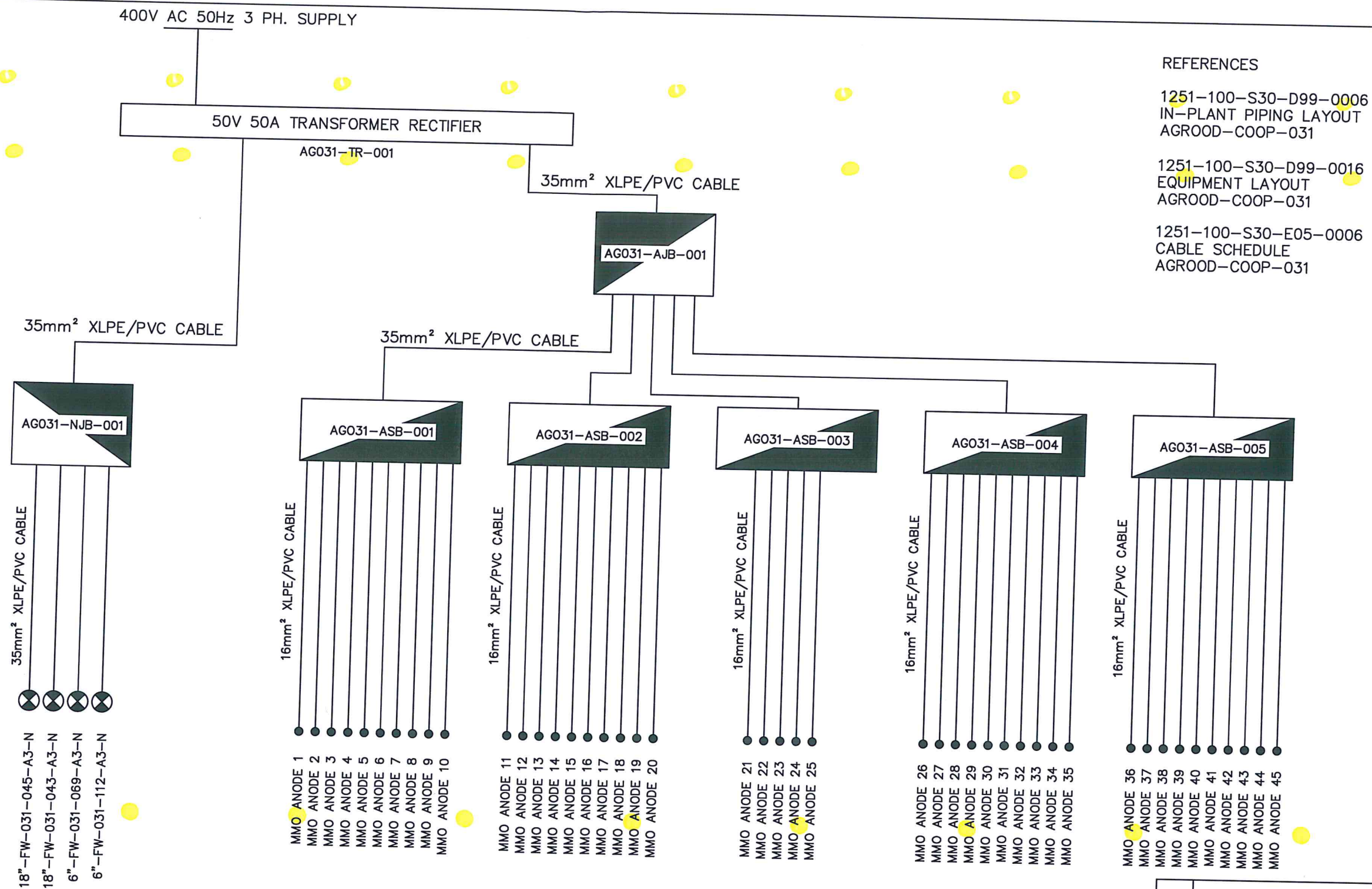
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EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

SUPPLIER DOUMENT REVIEW		PROJECT TITLE		NEW CRUDE OIL TANK FARM PROJECT	
<input type="checkbox"/> 1. Work may proceed.		PACKAGE DESCRIPTION		CATHODIC PROTECTION	
<input type="checkbox"/> 2. Revise and resubmit in accordance with comments,work may proceed subject to incorporation of changes indicated		EQUIPMANT TAG			
<input type="checkbox"/> 3. Revise and resubmit.(major comments)work may not proceed		CODE IDENTIFIER		E10	
<input type="checkbox"/> 4. Rejected.(reason to be specified on the document).		DOCUMENT NUMBER		1251-100-S30-E10-0005	
<input type="checkbox"/> 5. Hold for a specific reason(to be specified on the document).		REVISION		1	
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN-DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.					
NAME					
SIGNATURE		DATE:			

1	ISSUED FOR APPROVAL	N/A	PB	DC	14/01/21
0	ISSUED FOR REVIEW	N/A	PB	DC	23/10/20
No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
<b>corrpro</b> An Aegion™ Company					
Adam Street,Bowesfield Lane, Stockton-on-Tees,Cleveland TS18 3HQ. Tel: (01642) 614106. Fax: 614100 Telex: 587388					
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ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-GPC-030					
Drawn	PB	Date	23/10/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWC-030	Date	23/10/2020
				Issue No.	4





# REFERENCES

1251-100-S30-D99-0006  
IN-PLANT PIPING LAYOUT  
AGROOD-COOP-031

1251-100-S30-D99-0016  
EQUIPMENT LAYOUT  
AGROOD-COOP-031

1251-100-S30-E05-0006  
CABLE SCHEDULE  
AGROOD-COOP-031

SUPPLIER DOUMENT REVIEW		PROJECT TITLE		NEW CRUDE OIL TANK FARM PROJECT	
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PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.		EQUIPMANT TAG			
NAME Mohamed Mohsen Abdelbaeth		CODE IDENTIFIER		E10	SHEET 1 OF 4
SIGNATURE <i>MMA</i>		DATE:		DOCUMENT NUMBER	REVISION
				1251-100-S30-E10-0006	1

1 ISSUED FOR APPROVAL		N/A	PB	DC	14/01/21
0 ISSUED FOR REVIEW		N/A	PB	DC	24/08/20
No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
<b>corrpro</b> An Aegion™ Company Adam Street,Bowesfield Lane, Stockton-on-Tees,Cleveland TS18 3HQ. Tel: (01642) 614106. Fax: 614100 Telex: 587388					
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ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-COOP-031					
Drawn	PB	Date	24/08/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWG-031	Date	24/08/2020
					Issue No.
					1



400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG031-TR-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG031-AJB-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG031-NJB-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG031-ASB-006

AG031-ASB-007

AG031-ASB-008

AG031-ASB-009

35mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

16mm<sup>2</sup> XLPE/PVC CABLE

10"-CD-031-002-A3-N  
18"-FW-031-047-A3-N  
18"-FW-031-043-A3-N  
6"-FW-031-114-A3-N

MMO ANODE 46  
MMO ANODE 47  
MMO ANODE 48  
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MMO ANODE 77  
MMO ANODE 78  
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## REFERENCES

1251-100-S30-D99-0006  
IN-PLANT PIPING LAYOUT  
AGROOD-COOP-031

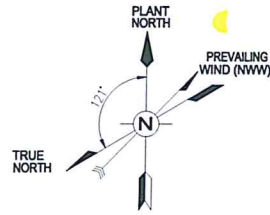
1251-100-S30-D99-0016  
EQUIPMENT LAYOUT  
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1251-100-S30-E05-0006  
CABLE SCHEDULE  
AGROOD-COOP-031

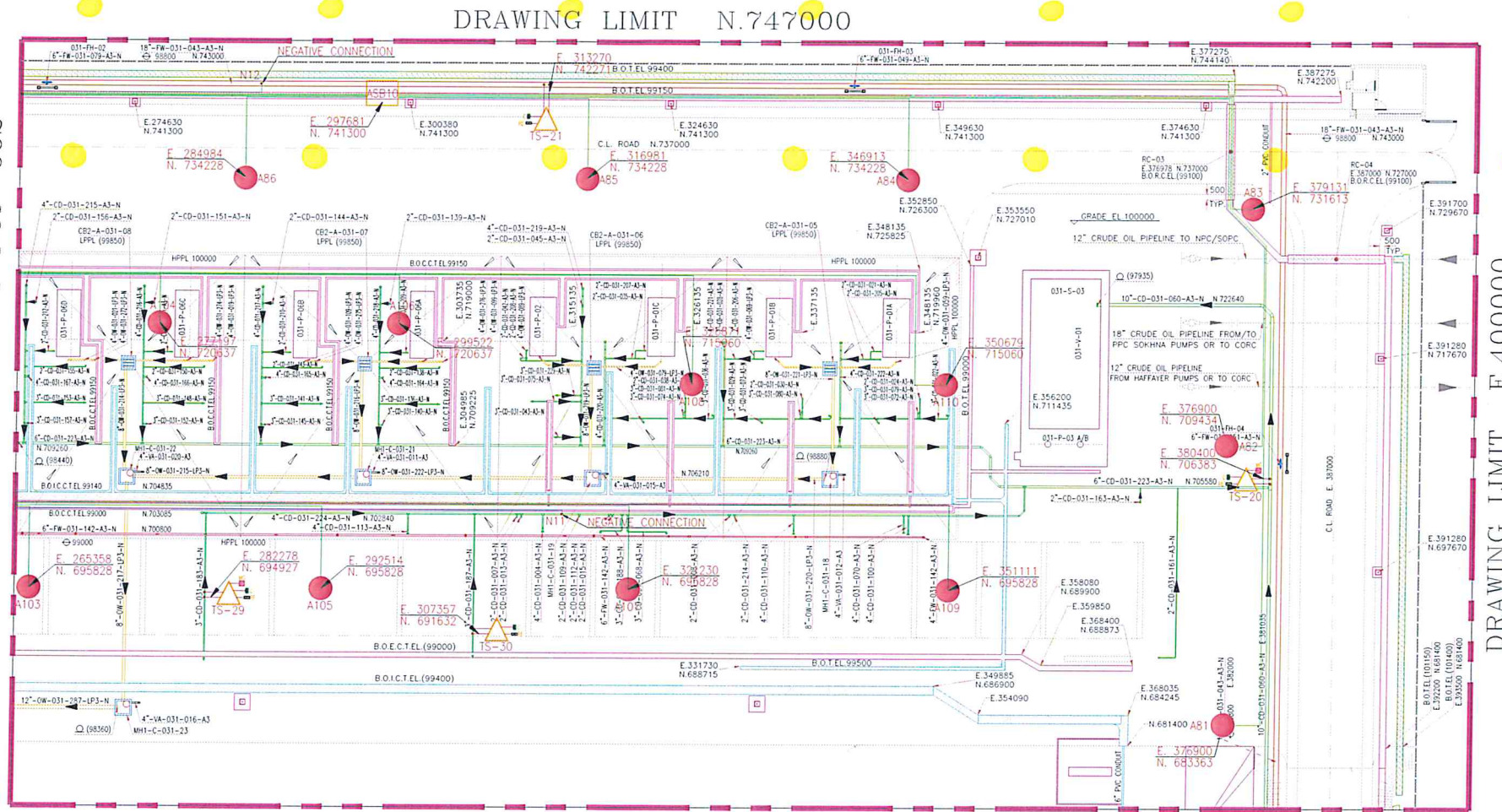
SUPPLIER DOUMENT REVIEW		PROJECT TITLE		NEW CRUDE OIL TANK FARM PROJECT	
<input type="checkbox"/> 1. Work may proceed.		PACKAGE DESCRIPTION		CATHODIC PROTECTION	
<input type="checkbox"/> 2. Revise and resubmit in accordance with comments,work may proceed subject to incorporation of changes indicated		EQUIPMANT TAG			
<input type="checkbox"/> 3. Revise and resubmit.(major comments)work may not proceed		CODE IDENTIFIER		E10 SHEET 2 OF 4	
<input type="checkbox"/> 4. Rejected.(reason to be specified on the document).		DOCUMENT NUMBER		1251-100-S30-E10-0006	
<input type="checkbox"/> 5. Hold for a specific reason(to be specified on the document).		REVISION		1	
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NAME					
SIGNATURE		DATE:			

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ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-COOP-031					
Drawn	PB	Date	24/08/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWC-031	Issue No.	1
		Date	24/08/2020		





MATCH LINE E.264000 FOR CONT.  
SEE DWG. NO. 01251-100-031-PUP-002

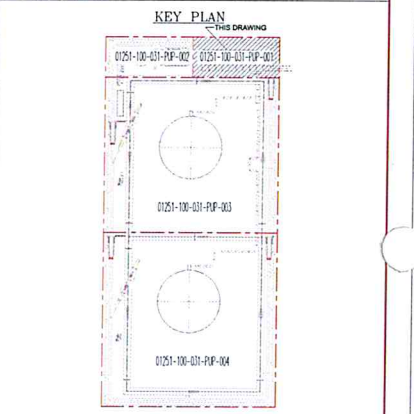


MATCH LINE N.675500 FOR CONT. SEE DWG. NO. 01251-100-031-PUP-003

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A0031-R-002 E. 376913 N. 520781	A0031-A08-002 E. 276913 N. 520781	A0031-N08-002 E. 376913 N. 524441	A0031-S08-002 E. 337432 N. 118654
A0031-R-003 E. 167500 N. 725500	A0031-A08-003 E. 167179 N. 725500	A0031-N08-003 E. 163859 N. 725500	A0031-S08-003 E. 309550 N. 268410
			A0031-S08-004 E. 154741 N. 142101
			A0031-S08-005 E. 369555 N. 336112
			A0031-S08-006 E. 369706 N. 538450
			A0031-S08-007 E. 140358 N. 478919
			A0031-S08-008 E. 141402 N. 502504
			A0031-S08-009 E. 369701 N. 675548
			A0031-S08-010 E. 297681 N. 735455
			A0031-S08-011 E. 182404 N. 692546
			A0031-S08-012 E. 259995 N. 706894
			A0031-S08-013 E. 140185 N. 668450

REFERENCES	
DOCUMENT NUMBER	DESCRIPTION
1251-100-530-D99-0024	TEST POSTS AND REFERENCE ELECTRODE INSTALLATION DETAILS
1251-100-530-D99-0024	ANODE INSTALLATION DRAWING
1251-100-530-D01-0001	TRANSFORMER RECTIFIER GENERAL ARRANGEMENT
1251-100-530-D01-0003	JUNCTION BOX GENERAL ARRANGEMENT
1251-100-530-K09-0001	CATHODIC PROTECTION EQUIPMENT DATA SHEETS
1251-100-530-C03-0007	DETAILED DESIGN REPORT AGROOD COOP 031
1251-100-031-K04-0001	ELECTRICAL HAZARDOUS AREA CLASSIFICATION LAYOUT (AGROOD AREA - MODULE-2)
1251-100-530-P99-0001	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL
NOTES	
1. THIS DRAWING HAS BEEN ISSUED FOR CATHODIC PROTECTION EQUIPMENT INSTALLATION PURPOSES ONLY BASED ON DWG(1251-100-530-D99-0006) FOR ANY OTHER INFORMATION PLEASE REFER TO ENPPI ISSUED DRAWING DWG (1251-100-031-PUP-001 to 004).	
2. CARE MUST BE GIVEN THAT THE INSTALLATION OF THE TRs AND JBS FOLLOWS THE COORDINATES INDICATED WITHIN THE DRAWING.	
3. EQUIPMENT SHALL BE INSTALLED IN AN UNCLASSIFIED AREA, INFORMATION REGARDING AREA CLASSIFICATION IS GIVEN IN WITHIN DRAWING NUMBER (1251-100-031-K04-0001).	
4. A MAXIMUM ALLOWABLE VARIATION FOR LOCATION OF TRs AND JUNCTION BOXES IS (10 meters).	
5. IN CASE OF ANY CONFLICT PLEASE RAISE TO THE CATHODIC PROTECTION ENGINEER FOR RESOLUTION.	
6. ALL INSTALLATION WORKS SHALL CONSIDER INSTALLATION MANUAL ISSUED BY CORP/PRO.	

LEGEND	
	- MMO ANODES
	- TRANSFORMER RECTIFIER
	- ANODE SPLITTING JUNCTION BOX
	- NEGATIVE JUNCTION BOX
	- POSITIVE JUNCTION BOX
	- TEST STATION WITH RE & COUPON
	- 35mm² XLPE/PVC POSITIVE FEEDER BLACK CABLE
	- 35mm² XLPE/PVC NEGATIVE FEEDER BLACK CABLE
	- 16mm² XLPE/PVC ANODE TAIL BLACK CABLE
	- 16mm² XLPE/PVC MONITORING BLACK CABLE
	- 10mm² XLPE/PVC REFERENCE ELECTRODE RED CABLE
	- 10mm² XLPE/PVC POLARISATION COUPON BLUE CABLE



4	RE-ISSUED FOR REVIEW	SD	DC	CL
3	RE-ISSUED FOR REVIEW	SD	DC	CL
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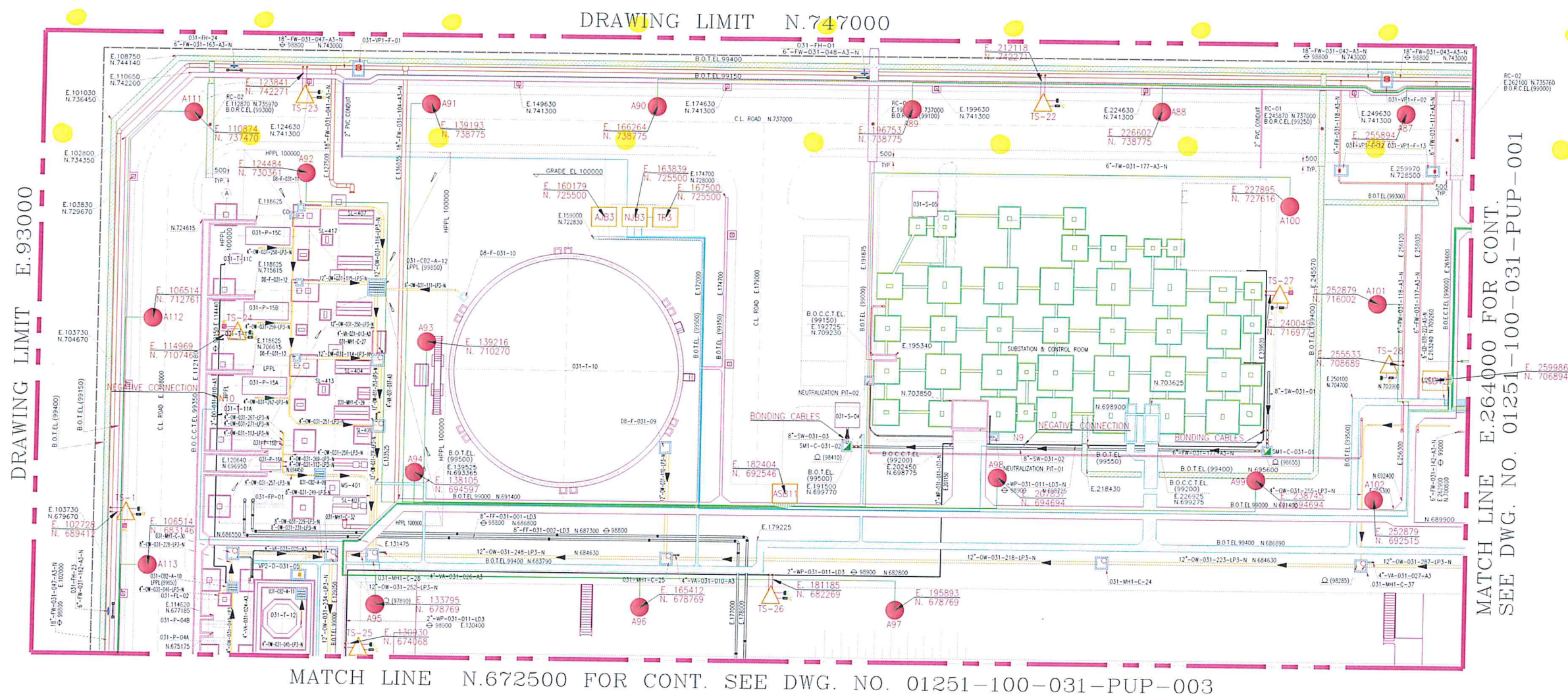
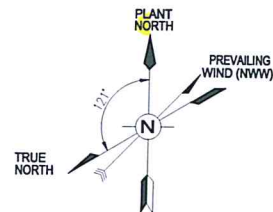
REVISION DATE DESCRIPTION BY CHECKED APPROVED



SUPPLIER DOCUMENT REVIEW		PROJECT		NEW CRUDE OIL TANK FARM PROJECT	
1. Work may proceed.		TITLE		CATHODIC PROTECTION	
2. Review and re-submit in accordance with comments, work may proceed subject to acceptance.		PACKAGE DESCRIPTION		EQUIPMENT TAG	
3. Review and re-submit (major comments) work may not proceed.		CODE IDENTIFIER		D99 SHEET 1 OF 1	
4. Rejected (reason to be specified on the document).		NAME		DOCUMENT NUMBER	
5. Hold for a specific reason (to be specified on the document).		DATE		REVISION	
SIGNATURE		18/08/2020		1251-100-530-D99-0006	
NAME		Mohamed Mahomed Abdelbath		4	

EGPC CRUDE OIL TANK FARM RAS BADRAN AREA (MODULE-2) PLANT PIPING LAYOUT - AGROOD-COOP-031	
Enppi	
ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES	
SCALE	1:200
ENPPI DRAWING NUMBER	1251-100-530-D99-0006
SHEET	01/04
REVISION	4

















REFERENCES	
DOCUMENT NUMBER	DESCRIPTION
1251-100-530-099-0024	TEST POSTS AND REFERENCE ELECTRICE INSTALLATION DETAILS
1251-100-530-099-0024	ANODE INSTALLATION DRAWING
1251-100-530-001-0001	TRANSFORMER RECTIFIER GENERAL ARRANGEMENT
1251-100-530-001-0003	JUNCTION BOX GENERAL ARRANGEMENT
1251-100-530-009-0001	CATHODIC PROTECTION EQUIPMENT DATA SHEETS
1251-100-530-003-0007	DETAILED DESIGN REPORT AGROOD COOP 031
1251-100-031-XGCH-001	ELECTRICAL HAZARDOUS AREA CLASSIFICATION LAOP (AGROOD AREA - MODULE-2)
1251-100-530-P99-0001	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL

## NOTES

1. THIS DRAWING IS BE ISSUED FOR CATHODIC PROTECTION EQUIPMENT INSTALLATION PURPOSES ONLY BASED ON DWG(1251-100-030-099-000) FOR DWG (1251-100-031-PUR-001 TO 004).
2. CARE MUST BE GIVEN DURING THE INSTALLATION OF THE TRS AND JBS FOLLOWS THE COORDINATES INDICIA WITHIN THE DRAWING.
3. EQUIPMENT SHALL BE INSTALLED IN AN UNCLASSIFIED AREA, INFORMATION REGARDING AREA CLASSIFICATION IS GIVEN IN WITHIN DRAWING NUMBER 1251-100-031-KGM-001.
4. MAXIMUM ALLOWED VARIATION FOR LOCATION OF TRS AND JUNCTION BOXES IS (10 meters).
5. IN CASE OF ANY CONFLICT PLEASE RAISE TO THE CATHODIC PROTECTION ENGINEER FOR RESOLUTION.
6. ALL INSTALLATION WORKS SHALL CONSIDER INSTALLATION MANUAL ISSUED BY CORROFO.

### LEGEND

-  - MMO ANODES
-  - TRANSFORMER RECTIFIER
-  - ANODE SPLITTING JUNCTION BOX
-  - NEGATIVE JUNCTION BOX
-  - POSITIVE JUNCTION BOX
-  - TEST STATION WITH RE & COUPON
-  - 35mm<sup>2</sup> XLPE/PVC POSITIVE FEEDER BLACK CABLE
-  - 35mm<sup>2</sup> XLPE/PVC NEGATIVE FEEDER BLACK CABLE
-  - 16mm<sup>2</sup> XLPE/PVC ANODE TAIL BLACK CABLE
-  - 16mm<sup>2</sup> XLPE/PVC MONITORING BLACK CABLE
-  - 10mm<sup>2</sup> XLPE/PVC REFERENCE ELECTRODE RED CABLE
-  - 10mm<sup>2</sup> XLPE/PVC POLARISATION COUPON BLUE CABLE



4	10/17/2024	RE-ISSUED FOR REVIEW	S.D.	D.C.	C.L.
3	10/27/2024	RE-ISSUED FOR REVIEW	S.D.	D.C.	C.L.
2	10/28/2024	RE-ISSUED FOR REVIEW	S.D.	D.C.	C.L.
1	10/14/2024	RE-ISSUED FOR REVIEW	S.D.	D.C.	C.L.
0	10/14/2024	ISSUED FOR REVIEW	S.D.	D.C.	C.L.
REV DATE	DESCRIPTION		BY	CHANGED	APPROVED

**NOTICE**

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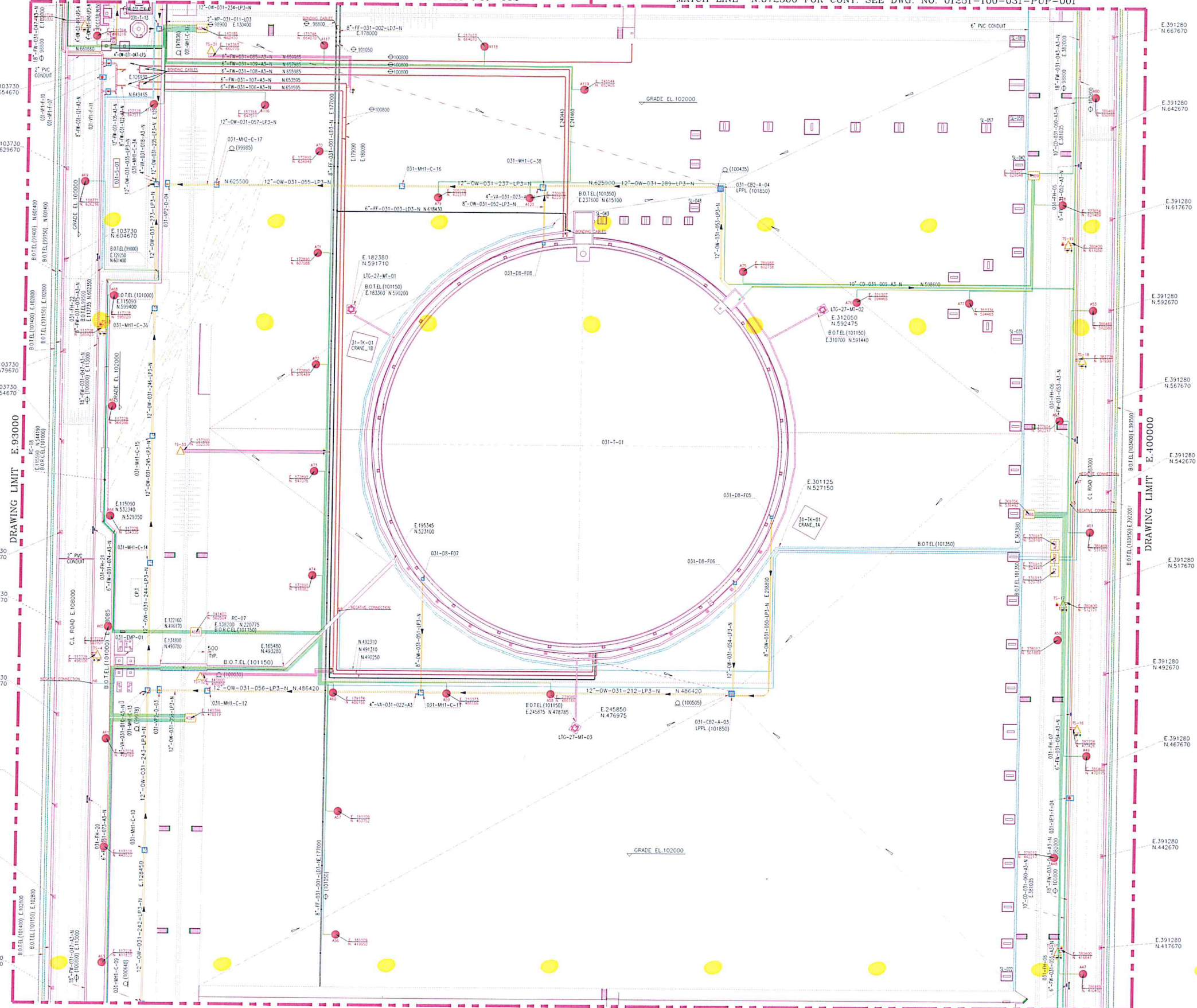
EGPC CRUDE OIL TANK FARM  
RAS BADRAN AREA (MODULE-2)  
PLANT PIPING LAYOUT - AGROOD-COOP-03

الشركاء الهندسيين للصناعات النسيجية والكيمائية

ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES			
SCALE	ENPP DRAWING NUMBER	SHEET	REVISION
1:200	1251-100-S30-D99-0006	02/04	4







### NOTES

1. THIS DRAWING HAS BEEN ISSUED FOR CATHODIC PROTECTION EQUIPMENT INSTALLATION PURPOSES ONLY BASED ON DWG(1251-100-530-D99-0006) FOR ANY OTHER INFORMATION PLEASE REFER TO ENPHI ISSUED DRAWING (1251-100-530-D99-0006) SUP-001 TO 004.
2. CARE MUST BE GIVEN THAT THE INSTALLATION OF THE TRs AND JBS FOLLOWS THE COORDINATES INDICATED WITHIN THE DRAWING.
3. EQUIPMENT SHALL BE INSTALLED IN AN UNCLASSIFIED AREA, INFORMATION REGARDING AREA CLASSIFICATION IS GIVEN IN WITHIN DRAWING NUMBER 1251-100-031-046-000-000.
4. A MAXIMUM ALLOWABLE VARIATION FOR LOCATION OF TRs AND JUNCTION BOXES IS (10 METERS).
5. IN CASE OF ANY COMPLYT PLEASE RAISE TO THE CATHODIC PROTECTION ENGINEER FOR RESOLUTION.
6. ALL INSTALLATION WORKS SHALL CONSIDER INSTALLATION MANUAL ISSUED BY CORROFO.

KEY PLAN

0751-100-031-PF-001

0751-100-031-PF-003

0751-100-031-PF-004

THIS DRAWING

NOTICE

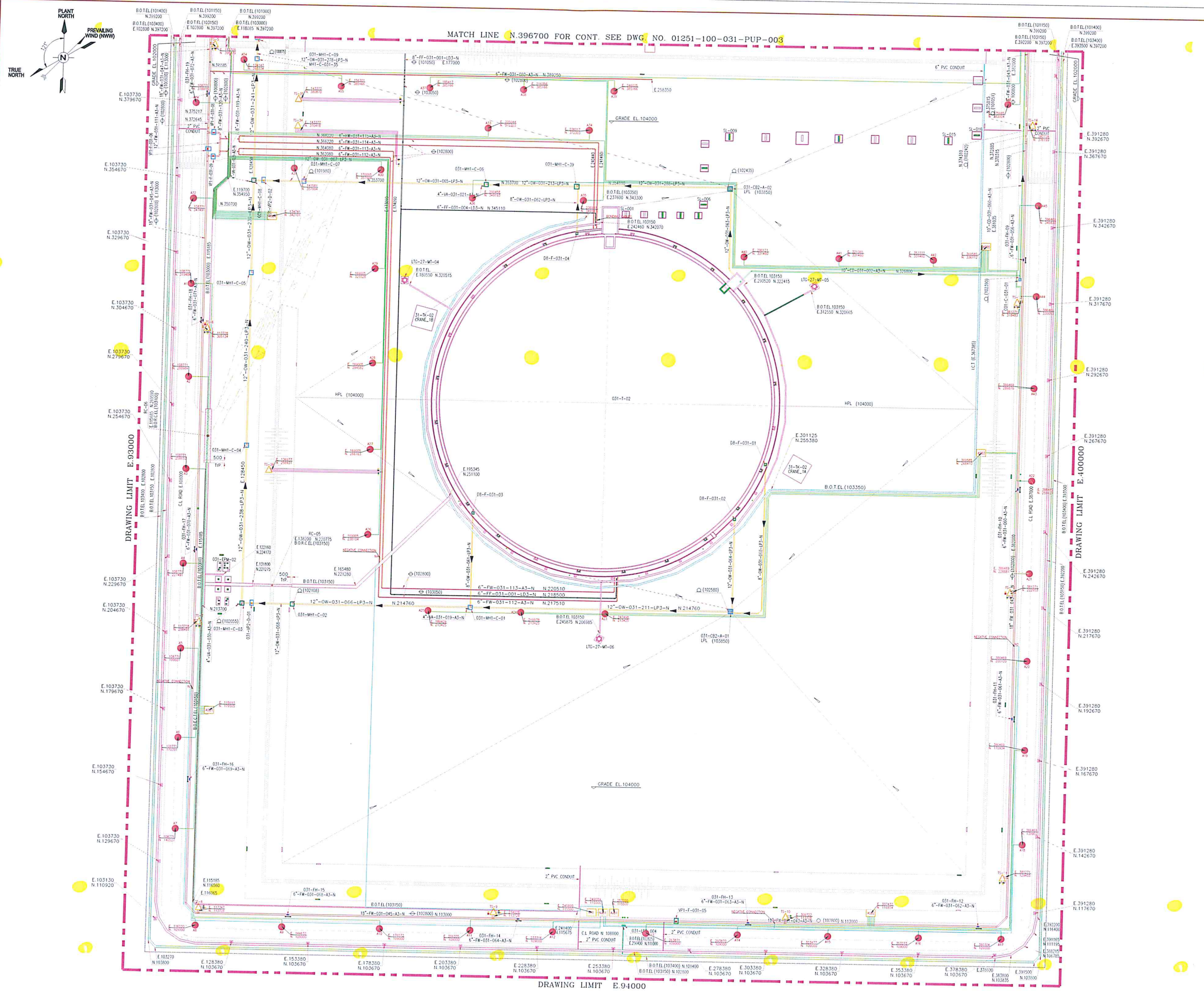
THIS DRAWING HAS NOT BEEN PUBLISHED. IT IS THE SOLE PROPERTY OF ENRPI. IT IS LENT TO THE RECIPIENT FOR HIS CONFIDENTIAL USE ONLY, AND UPON THE CONDITIONS AND AGREEMENTS FOLLOWING IN CONSIDERATION OF THE LOAN OF THIS DRAWING: THE RECIPIENT PROMISES AND AGREES TO RETURN IT UPON REQUEST AND THAT IT SHALL NOT BE REPRODUCED, COPIED, LENT, OR OTHERWISE DISPOSED OF DIRECTLY OR INDIRECTLY WITHOUT ENRPI'S WRITTEN CONSENT.



الفرع، الهندسة، للصناعات النسيجية والكربونية

**Enppi** **إنبي**





DOCUMENT NUMBER		DESCRIPTION
1251-100-530-D99-0024	TEST POSTS AND REFERENCE ELECTRODE INSTALLATION DETAILS	
1251-100-530-D99-0024	ANODE INSTALLATION DRAWING	
1251-100-530-D01-0001	TRANSFORMER RECTIFIER GENERAL ARRANGEMENT	
1251-100-530-D01-0003	JUNCTION BOX GENERAL ARRANGEMENT	
1251-100-530-K09-0001	CATHODIC PROTECTION EQUIPMENT DATA SHEETS	
1251-100-530-C03-0007	DETAILED DESIGN REPORT AGROOD COOP 031	
1251-100-031-KGH-001	ELECTRICAL HAZARDOUS AREA CLASSIFICATION LAYOUT (AGROOD AREA - MODULE-2)	
1251-100-530-P99-0001	INSTALLATION, COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL	

NOTES

1. THIS DRAWING HAS BEEN ISSUED FOR CATHODIC PROTECTION EQUIPMENT INSTALLATION PURPOSES ONLY BASED ON DWG(1251-100-530-D99-0006) FOR ANY OTHER INFORMATION PLEASE REFER TO ENPPI ISSUED DRAWING DWG (1251-100-031-PUP-001 to 004).

2. CARE MUST BE GIVEN THAT THE INSTALLATION OF THE TRs AND JBs FOLLOWS THE COORDINATES INDICATED WITHIN THE DRAWING.

3. EQUIPMENT SHALL BE INSTALLED IN AN UNCLASSIFIED AREA, INFORMATION REGARDING AREA CLASSIFICATION IS GIVEN IN WITHIN DRAWING NUMBER (1251-100-031-KGH-001).

4. A MAXIMUM ALLOWABLE VARIATION FOR LOCATION OF TRs AND JUNCTION BOXES IS (10 meters).

5. IN CASE OF ANY CONFLICT PLEASE PRAISE TO THE CATHODIC PROTECTION ENGINEER FOR RESOLUTION.

6. ALL INSTALLATION WORKS SHALL CONSIDER INSTALLATION MANUAL ISSUED BY CORRO.

LEGEND

- MMO ANODES

- TRANSFORMER RECTIFIER

- ANODE SPLITTING JUNCTION BOX

- NEGATIVE JUNCTION BOX

- POSITIVE JUNCTION BOX

- TEST STATION WITH RE & COUPON

- 35mm<sup>2</sup> XLPE/PVC POSITIVE FEEDER BLACK CABLE

- 35mm<sup>2</sup> XLPE/PVC NEGATIVE FEEDER BLACK CABLE

- 16mm<sup>2</sup> XLPE/PVC ANODE TAIL BLACK CABLE

- 16mm<sup>2</sup> XLPE/PVC MONITORING BLACK CABLE

- 10mm<sup>2</sup> XLPE/PVC REFERENCE ELECTRODE RED CABLE

- 10mm<sup>2</sup> XLPE/PVC POLARISATION COUPON BLUE CABLE

KEY PLAN

01251-100-031-PUP-002

01251-100-031-PUP-001

01251-100-031-PUP-003

01251-100-031-PUP-004

THIS DRAWING

4	RE-ISSUED FOR REVIEW	S.D.	D.C.	C.L.
3	RE-ISSUED FOR REVIEW	S.D.	D.C.	C.L.
2	RE-ISSUED FOR REVIEW	S.D.	D.C.	C.L.
1	RE-ISSUED FOR REVIEW	S.D.	D.C.	C.L.
0	ISSUED FOR REVIEW	S.D.	D.C.	C.L.

REV DATE DESCRIPTION BY CHECKED APPROVED

NOTICE

THIS DRAWING HAS NOT BEEN PUBLISHED. IT IS THE SOLE PROPERTY OF ENPPI. IT IS LENT TO THE RECIPIENT FOR HIS USE ONLY. THE RECIPIENT SHALL NOT REPRODUCE OR TRANSMIT THIS DRAWING IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN CONSENT OF ENPPI.

EGPC

EGPC CRUDE OIL TANK FARM AGROOD AREA (MODULE-2) PLANT PIPING LAYOUT - AGROOD-COOP-031

Enppi

ENGINEERING FOR THE PETROLEUM AND PROCESS INDUSTRIES

SCALE: 1:400

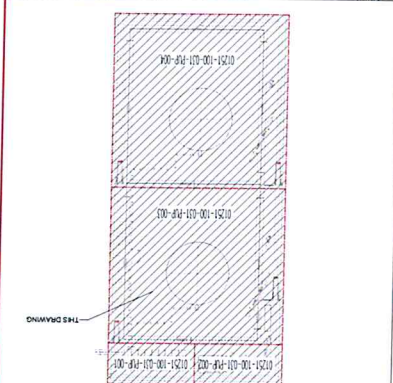
SHEET: 04/04

REVISION: 4



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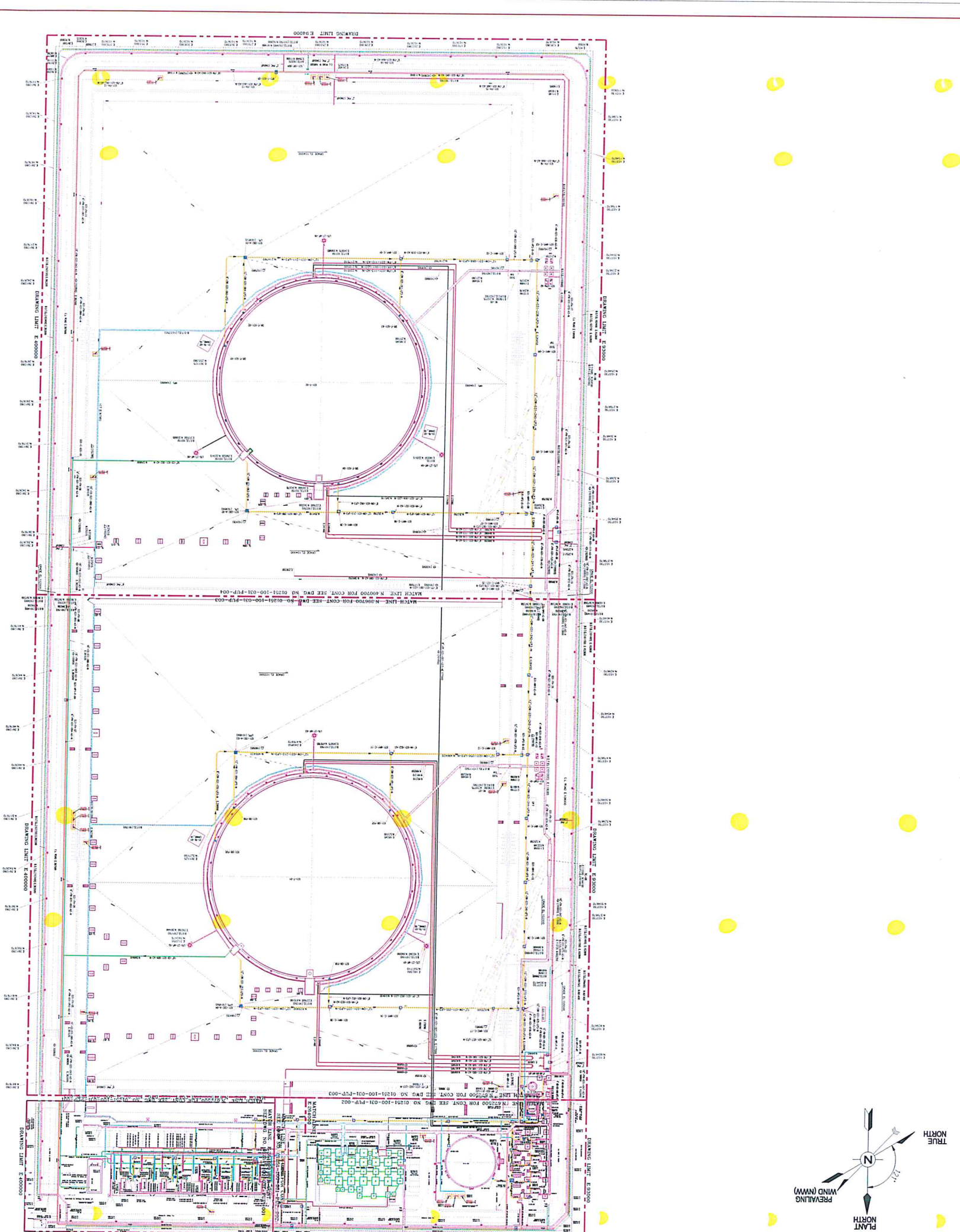
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2	2	RE- ISSUED FOR REVIEW	S.D	CL	CL
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0	4	ISSUED FOR REVIEW	S.D	CL	CL



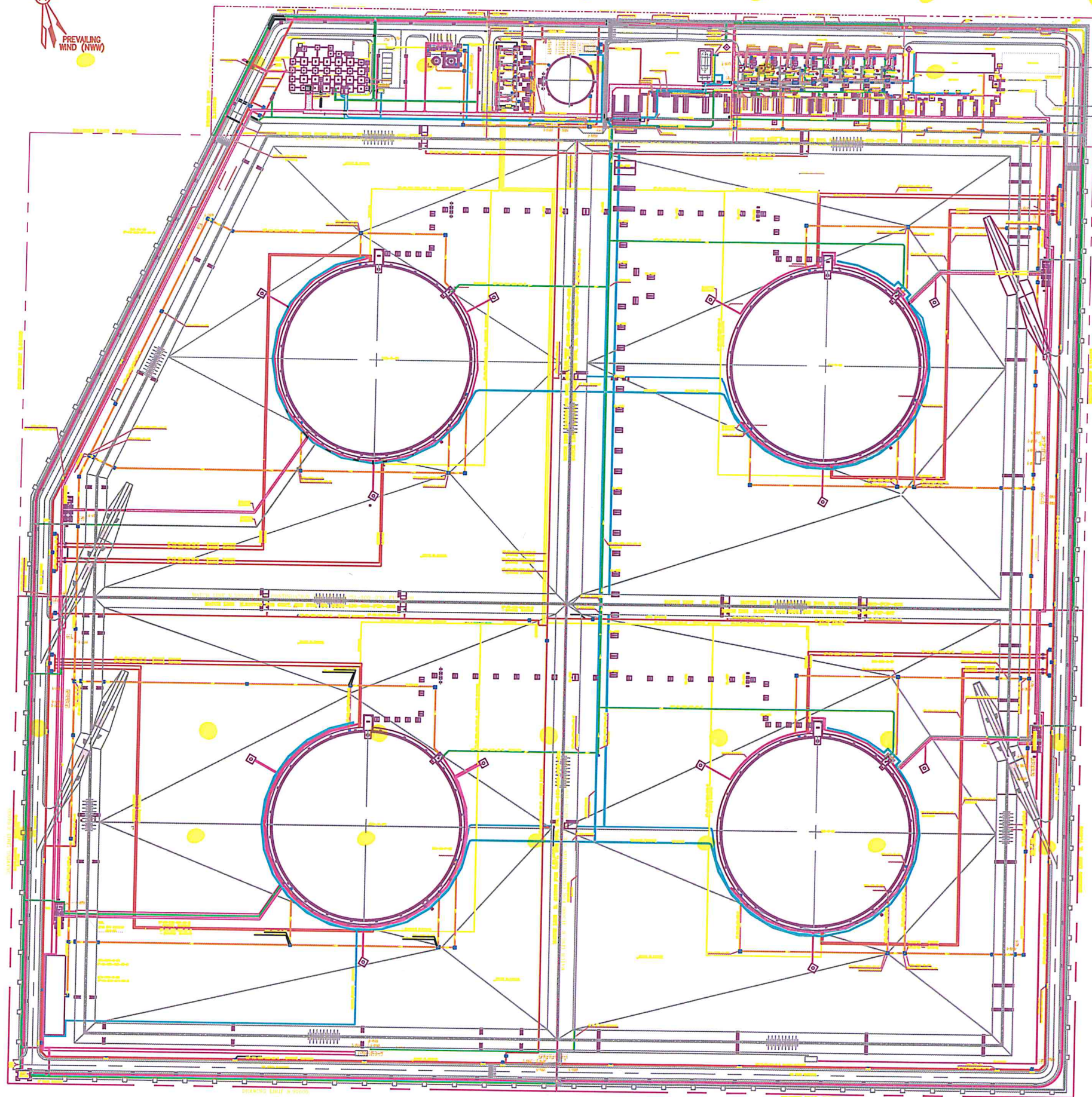
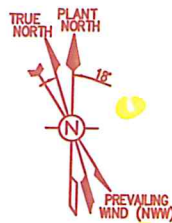
KEY PLAN

TR	- TRANSFORMER RECTIFIER
A.B	- ANODE SPLITTING JUNCTION BOX
N.B	- NEGATIVE JUNCTION BOX
P.B	- POSITIVE JUNCTION BOX

DOCUMENT NUMBER	DESCRIPTION
1251-100-530-099-000	EQUIPMENT (2-PLANT LAYOUT) - 250000-COMP-001
1251-100-530-099-000	INSTALLATION COMMISSIONING, OPERATIONS AND MAINTENANCE MANUAL







CATHODIC PROTECTION CIRCUIT 1		
EQUIPMENT FACILITY	EASTING	NORTHING
TRANSFORMER RECTIFIER TR1	413429	706548
ANODE JUNCTION BOX AJB1	420749	706548
NEGATIVE JUNCTION BOX NJB1	418089	706548
ANODE SPLITTER BOX ASB1	300823	707584
ANODE SPLITTER BOX ASB2	420749	709387
ANODE SPLITTER BOX ASB3	584322	718438
ANODE SPLITTER BOX ASB4	501091	687150

CATHODIC PROTECTION CIRCUIT 2		
EQUIPMENT FACILITY	EASTING	NORTHING
TRANSFORMER RECTIFIER TR2	689326	469563
ANODE JUNCTION BOX AJB2	689326	476962
NEGATIVE JUNCTION BOX NJB2	689326	473236
ANODE SPLITTER BOX ASB5	681194	609072
ANODE SPLITTER BOX ASB6	689904	449728
ANODE SPLITTER BOX ASB7	689904	444693
ANODE SPLITTER BOX ASB8	689326	480622

CATHODIC PROTECTION CIRCUIT 3		
EQUIPMENT FACILITY	EASTING	NORTHING
TRANSFORMER RECTIFIER TR3	687129	285082
ANODE JUNCTION BOX AJB3	687129	292904
NEGATIVE JUNCTION BOX NJB3	687129	289257
ANODE SPLITTER BOX ASB9	694605	118096
ANODE SPLITTER BOX ASB10	680182	186306
ANODE SPLITTER BOX ASB11	686072	337432
ANODE SPLITTER BOX ASB12	419008	116603

CATHODIC PROTECTION CIRCUIT 4		
EQUIPMENT FACILITY	EASTING	NORTHING
TRANSFORMER RECTIFIER TR4	299100	117500
ANODE JUNCTION BOX AJB4	306420	117500
NEGATIVE JUNCTION BOX NJB4	302760	117500
ANODE SPLITTER BOX ASB13	404297	116603
ANODE SPLITTER BOX ASB14	407740	116603
ANODE SPLITTER BOX ASB15	310130	117500
ANODE SPLITTER BOX ASB16	411273	116603

CATHODIC PROTECTION CIRCUIT 5		
EQUIPMENT FACILITY	EASTING	NORTHING
TRANSFORMER RECTIFIER TR5	124122	317489
ANODE JUNCTION BOX AJB5	124122	324842
NEGATIVE JUNCTION BOX NJB5	124122	321206
ANODE SPLITTER BOX ASB17	124113	356279
ANODE SPLITTER BOX ASB18	125860	202250
ANODE SPLITTER BOX ASB19	115749	378836
ANODE SPLITTER BOX ASB20	129874	427046

CATHODIC PROTECTION CIRCUIT 6		
EQUIPMENT FACILITY	EASTING	NORTHING
TRANSFORMER RECTIFIER TR6	413429	703464
ANODE JUNCTION BOX AJB6	420749	703464
NEGATIVE JUNCTION BOX NJB6	417089	703464
ANODE SPLITTER BOX ASB21	406941	659809
ANODE SPLITTER BOX ASB22	397906	659809
ANODE SPLITTER BOX ASB23	424972	656309
ANODE SPLITTER BOX ASB24	195980	598071

## REFERENCES

DOCUMENT NUMBER	DESCRIPTION
01251-100-030-PUP-001	AGROOD AREA MODULE 1 - UNDERGROUND PIPING COUPON PLAN
01251-100-030-PUP-002	AGROOD AREA MODULE 1 - UNDERGROUND PIPING COUPON PLAN
01251-100-030-PUP-003	AGROOD AREA MODULE 1 - UNDERGROUND PIPING COUPON PLAN
01251-100-030-PUP-004	AGROOD AREA MODULE 1 - UNDERGROUND PIPING COUPON PLAN
01251-100-030-PUP-005	AGROOD AREA MODULE 1 - UNDERGROUND PIPING COUPON PLAN
01251-100-030-PUP-006	AGROOD AREA MODULE 1 - UNDERGROUND PIPING COUPON PLAN
01251-100-030-PUP-007	AGROOD AREA MODULE 1 - UNDERGROUND PIPING COUPON PLAN
01251-100-030-PUP-008	AGROOD AREA MODULE 1 - UNDERGROUND PIPING COUPON PLAN

## NOTES

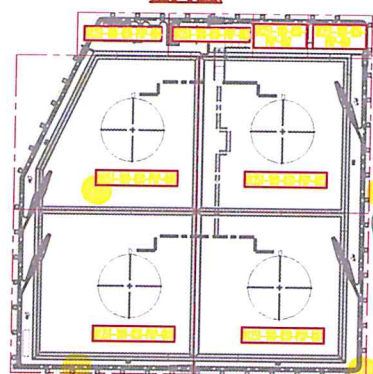
- ALL COORDINATES, DIMENSIONS & ELEVATIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- THIS DRAWING SHALL BE UTILIZED FOR CATHODIC PROTECTION PURPOSES ONLY. SEE OTHER STANDARD DRAWINGS FOR OTHER NON CATHODIC PROTECTION SCALES.
- ANODE BOX AND TRANSFORMER RECTIFIERS SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVIDED COORDINATES.
- ALL CATHODIC PROTECTION EQUIPMENT SHALL BE INSTALLED IN DESIGNATED SAFE AREAS ONLY.
- THE LOCATION OF THE TRANSFORMER RECTIFIERS AND ANODE BOXES CAN BE ADJUSTED TO A MAXIMUM TOLERANCE OF 10 METERS.
- CLARIFICATIONS OF ANY SORT SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE CATHODIC PROTECTION ENGINEER FOR REVIEW AND RESOLUTION.

## LEGEND

## LEGEND :

- TR - TRANSFORMER RECTIFIER
- AJB - ANODE SPLITTING JUNCTION BOX
- NJB - NEGATIVE JUNCTION BOX
- PJB - POSITIVE JUNCTION BOX

## KEY PLAN



8	ISSUED FOR APPROVAL	P.J.	S.D.	C.L.
9	ISSUED FOR APPROVAL	P.J.	S.D.	C.L.
4	ISSUED FOR APPROVAL	P.J.	S.D.	C.L.
3	ISSUED FOR APPROVAL	P.J.	S.D.	C.L.
2	ISSUED FOR APPROVAL	P.J.	S.D.	C.L.
1	ISSUED FOR REVIEW	P.J.	S.D.	C.L.
0	ISSUED FOR REVIEW	P.J.	S.D.	C.L.
DATE	DESCRIPTION	BY	CHECKED	APPROVED

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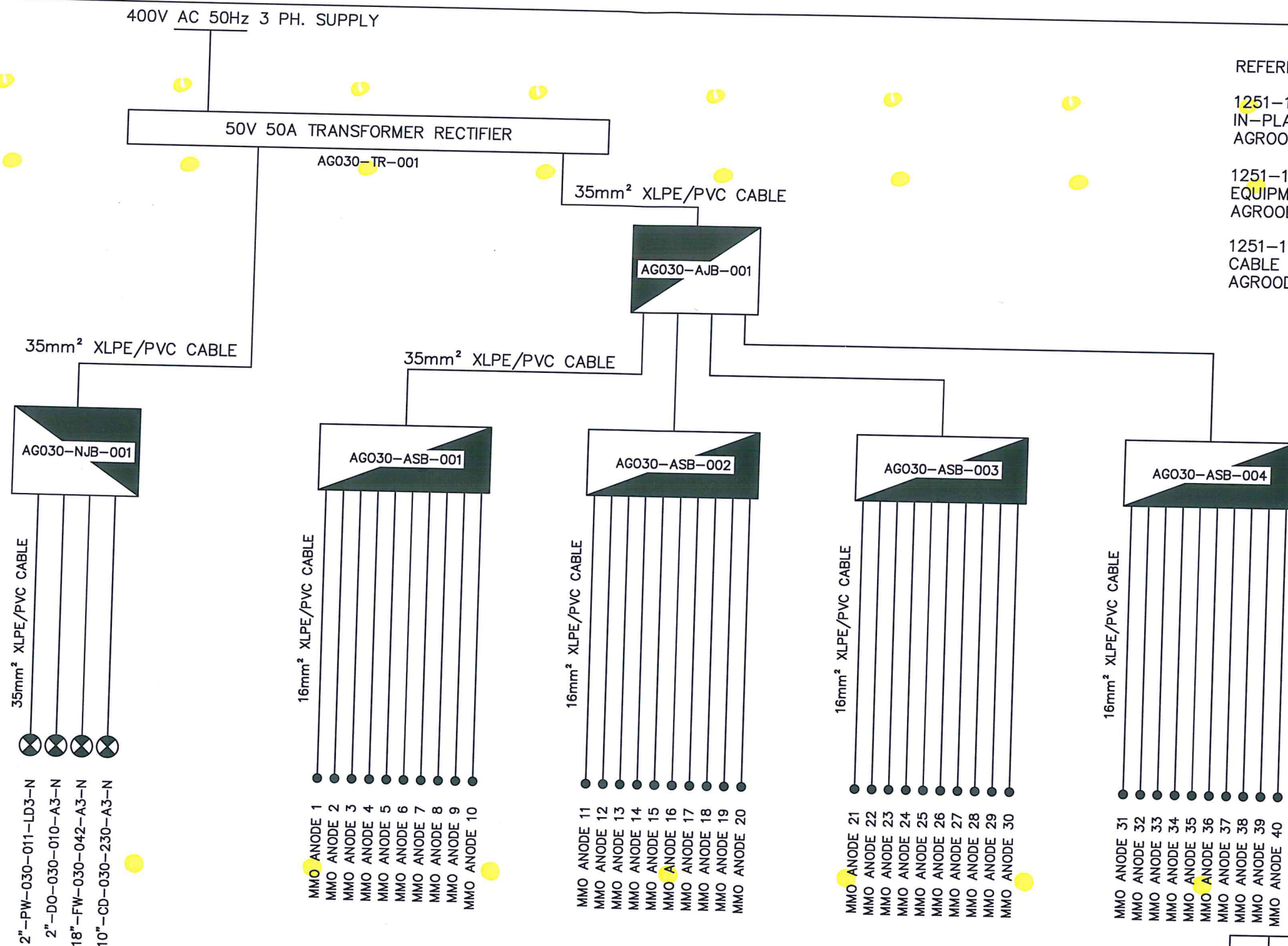


EGPC CRUDE OIL TANK FARM  
AGROOD AREA (MODULE-1) -  
EQUIPMENT LAYOUT - AGROOD-GPC-030

المهندس لسانة الترتيب والكمبيوتر  
Enppi

SUPPLIER DOCUMENT REVIEW		PROJECT		NEW CRUDE OIL TANK FARM PROJECT	
1. Work may proceed.		TITLE		CATHODIC PROTECTION	
2. Review and comments to be incorporated by the supplier.		PACKAGE DESCRIPTION		EQUIPMENT LAYOUT	
3. Review and comments (major comments) work may not proceed.		EQUIPMENT TAG		CODE IDENTIFIER	
4. Rejected (reason to be specified on the document).		NAME		DOCUMENT NUMBER	
5. Hold for a specific reason (to be specified on the document).		SIGNATURE		REVISION	
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.		DATE		6	
		1251-100-S30-D99-0017		1:150	





#### REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

SUPPLIER DOCUMENT REVIEW		PROJECT TITLE		NEW CRUDE OIL TANK FARM PROJECT	
<input checked="" type="checkbox"/> 1. Work may proceed.		PACKAGE DESCRIPTION		CATHODIC PROTECTION	
<input type="checkbox"/> 2. Revise and resubmit in accordance with comments, work may proceed subject to incorporation of changes indicated		EQUIPMENT TAG			
<input type="checkbox"/> 3. Revise and resubmit.(major comments)work may not proceed		CODE IDENTIFIER		E10 SHEET 1 OF 7	
<input type="checkbox"/> 4. Rejected.(reason to be specified on the document).		DOCUMENT NUMBER		1251-100-S30-E10-0005	
<input type="checkbox"/> 5. Hold for a specific reason(to be specified on the document).		REVISION		1	
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.					
NAME Mohamed Mohsen Abdelbaeth					
SIGNATURE		DATE:			

1	ISSUED FOR APPROVAL	N/A	PB	DC	14/01/21
0	ISSUED FOR REVIEW	N/A	PB	DC	23/10/20
No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
<b>Corpro</b> An Aegion™ Company					
Adam Street, Bowesfield Lane, Stockton-on-Tees, Cleveland TS18 3HQ. Tel: (01642) 614106. Fax: 614100 Telex: 587388					
Information shown on this drawing is confidential and must not be copied or conveyed to third parties without the express permission of Corpro Companies Europe Ltd. Certain items shown on this drawing are subject to worldwide patent applications.					
ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-GPC-030					
Drawn	PB	Date	23/10/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWG-030	Issue No.	1



400V AC 50Hz 3 PH. SUPPLY

50V 50A TRANSFORMER RECTIFIER

AG030-TR-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-AJB-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-NJB-002

35mm<sup>2</sup> XLPE/PVC CABLE

AG030-ASB-005

AG030-ASB-006

AG030-ASB-007

AG030-ASB-008

35mm<sup>2</sup> XLPE/PVC CABLE

6"-FW-030-054-A3-N  
10"-CD-030-002-A3-N  
6"-FW-030-109-A3-N  
6"-FW-030-106-A3-N

16mm<sup>2</sup> XLPE/PVC CABLE

MMO ANODE 41  
MMO ANODE 42  
MMO ANODE 43  
MMO ANODE 44  
MMO ANODE 45  
MMO ANODE 46  
MMO ANODE 47  
MMO ANODE 48  
MMO ANODE 49  
MMO ANODE 50

16mm<sup>2</sup> XLPE/PVC CABLE

MMO ANODE 51  
MMO ANODE 52  
MMO ANODE 53  
MMO ANODE 54  
MMO ANODE 55  
MMO ANODE 56  
MMO ANODE 57  
MMO ANODE 58  
MMO ANODE 59  
MMO ANODE 60

16mm<sup>2</sup> XLPE/PVC CABLE

MMO ANODE 61  
MMO ANODE 62  
MMO ANODE 63  
MMO ANODE 64  
MMO ANODE 65  
MMO ANODE 66  
MMO ANODE 67  
MMO ANODE 68  
MMO ANODE 69  
MMO ANODE 70

16mm<sup>2</sup> XLPE/PVC CABLE

MMO ANODE 71  
MMO ANODE 72  
MMO ANODE 73  
MMO ANODE 74  
MMO ANODE 75  
MMO ANODE 76  
MMO ANODE 77  
MMO ANODE 78  
MMO ANODE 79  
MMO ANODE 80

## REFERENCES

1251-100-S30-D99-0005  
IN-PLANT PIPING LAYOUT  
AGROOD-GPC-030

1251-100-S30-D99-0015  
EQUIPMENT LAYOUT  
AGROOD-GPC-030

1251-100-S30-E05-0005  
CABLE SCHEDULE  
AGROOD-GPC-030

<b>SUPPLIER DOUMENT REVIEW</b>		<b>PROJECT TITLE</b>		<b>NEW CRUDE OIL TANK FARM PROJECT</b>	
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<input type="checkbox"/> 2. Revise and resubmit in accordance with comments,work may proceed subject to incorporation of changes indicated		<b>EQUIPMANT TAG</b>			
<input type="checkbox"/> 3. Revise and resubmit.(major comments)work may not proceed		<b>CODE IDENTIFIER</b>		<b>E10</b>	
<input type="checkbox"/> 4. Rejected.(reason to be specified on the document).		<b>DOCUMENT NUMBER</b>		<b>1251-100-S30-E10-0005</b>	
<input type="checkbox"/> 5. Hold for a specific reason(to be specified on the document).		<b>REVISION</b>		<b>1</b>	
PERMISSION TO PROCEED DOES NOT CONSTITUTE ACCEPTANCE OR APPROVAL OF DESIGN DETAILS, CALCULATIONS, ANALYSIS, TEST METHODS OR MATERIALS DEVELOPED OR SELECTED BY SUPPLIER FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.					
<b>NAME</b>					
<b>SIGNATURE</b>					
<b>DATE:</b>					

1 ISSUED FOR APPROVAL		N/A	PB	DC	14/01/21
0 ISSUED FOR REVIEW		N/A	PB	DC	23/10/20
No.	DESCRIPTION	DCR No.	BY	CHECK	DATE
<b>corrpro</b> An Aegion™ Company		Information shown on this drawing is confidential and must not be copied or conveyed to third parties without the express permission of Corpro Companies Europe Ltd. Certain items shown on this drawing are subject to worldwide patent applications.			
Adam Street,Bowesfield Lane, Stockton-on-Tees,Cleveland TS18 3HQ. Tel: (01642) 614106. Fax: 614100 Telex: 587388					
ENPPI		NEW CRUDE OIL TANK FARM PROJECT			
SINGLE LINE DIAGRAM AGROOD-GPC-030					
Drawn	PB	Date	23/10/2020	Checked	DC
Scale	NTS	DRG. No.	34501020-DWG-030	Issue No.	1








COMPLETE DOCUMENT REVIEW <input type="checkbox"/> 1. How many projects? <input type="checkbox"/> 2. Name and physical location of association with connection to project? <input type="checkbox"/> 3. Name and physical location of association? <input type="checkbox"/> 4. Name and physical location of community group? May not be a church. <input type="checkbox"/> 5. Project (located) to be studied on the document? <input type="checkbox"/> 6. Project (located) to be studied on the document?		PROJECT TITLE NEW CANOE OIL TANK FROM PROJECT	
REASONING TO INCLUDE DOES NOT CONSTITUTE DISQUALIFICATION, AND FOR THE PURPOSE OF MATERIALS EVALUATION, ALL DOCUMENTS WILL BE REVIEWED WITH COGNITIVE DISQUALIFICATION.		PACKAGE DESCRIPTION CATHODIC PROTECTED EQUIPMENT TAG	
NAME: <b>Mohamed Mohsen</b>		CORE NUMBER D99	SHEET 1 OF
STANDARD: <b>744141</b>	DATE:	DOCUMENT NUMBER 1251-100-530-D99-0023	REVISION 4

Reference Drawings		Revised		Date		Drawn		Checked		Scale		Sheet		Title	
Rev.	Details	C				As Supplied	As Supplied	Sheet	DC	1:30(3/2)	1:4	A2			
4	RE-ISSUED FOR APPROVAL	SNP	DC	23/09/20											CATHODIC PROTECTION SYSTEM CONTROL PANEL LAYOUT FOR AUTOMATIC TRANSFORMER RECTIFIER
3	RE-ISSUED FOR APPROVAL	SNP	DC	15/05/20											
2	RE-ISSUED FOR APPROVAL	SNP	DC	14/05/20											
1	RE-ISSUED FOR APPROVAL	SNP	DC	30/03/20											

Drawings in reference to 18 Units System Drawings  
Copyright © 2004 Hockley Inc. [www.hockley.com](http://www.hockley.com)

Drawing No. CH-0375-1001  
Drawing the Control  
3501 02/05/01-01/06/02  
Rev. 4

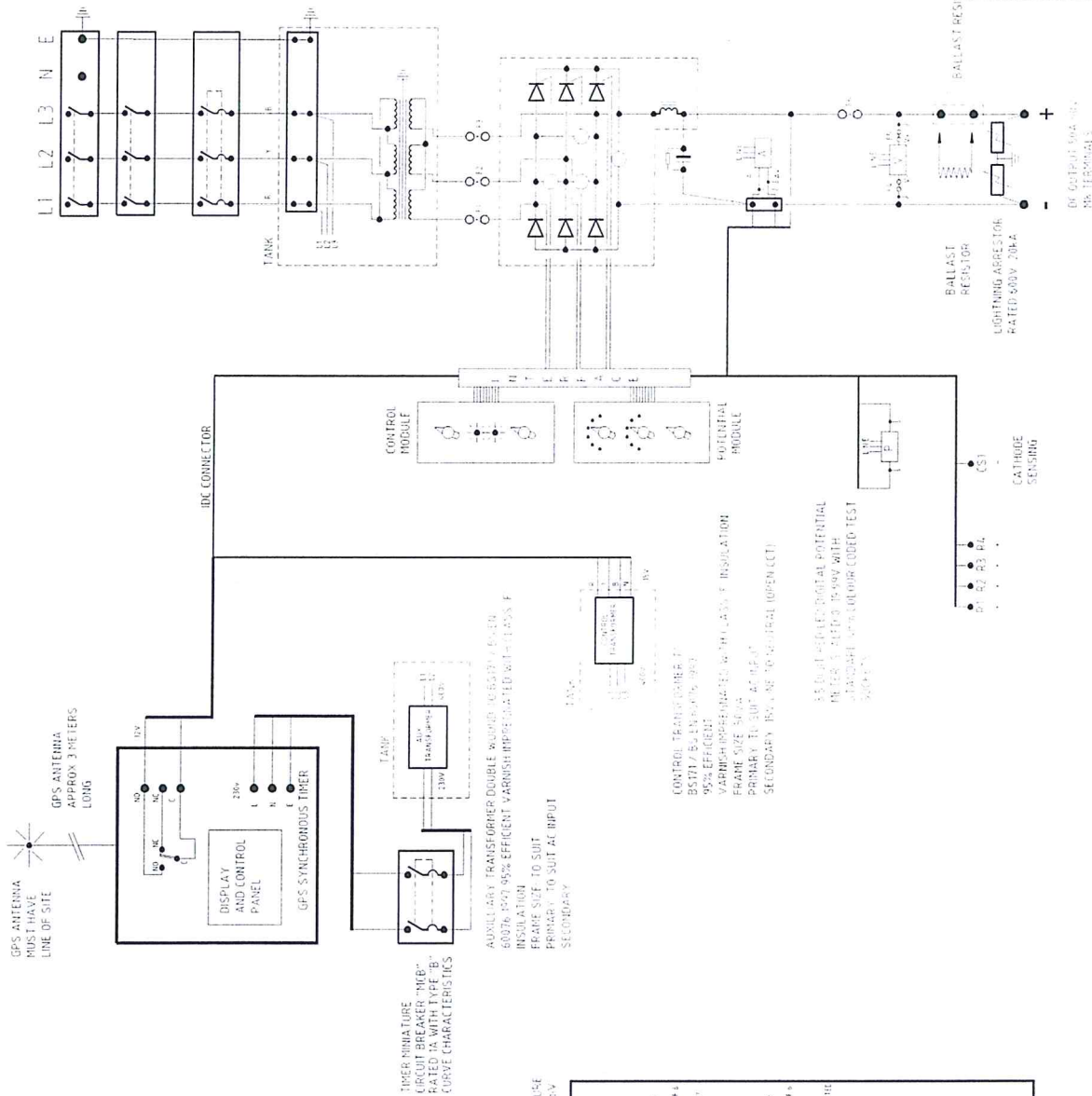
**HOCKLEY**





NOTES

- 1 ALL SINGLE COIL CABLES ARE NUMBERED
- 2 AND COLOUR CODED AND ALL MULTIPLE
- 3 CABLES ARE LETTTERED TO BE EN 62429 2003
- 4 NUMBERS ARE ONLY LETTTERED TO GROUP
- 5 CABLES REQUIRED
- 6 MINIMUM CABLE RATED 600/1000V GRADE
- 7 105°C TEMPERATURE RATED CABLE CODED
- 8 TO EN 62421
- 9 COMPONENTS SUITABLE FOR OIL IMMERSION
- 10 UP TO 85°C
- 11 DESIGN TEMPERATURE SUITABLE UP TO 105°C
- 12 AMBIENT STANDSTANDS TO 50°C
- 13 ALL WIRING & TERMINAL CABLES TO BE
- 14 COMPLIANT WITH PREVAILING REGULATIONS
- 15 AT THE POINT OF INSTALLATION
- 16 STANDARD IP67 VOLTAGE 1000-2500 V
- 17 BASED ON 40-70%  
PURCHASER SHALL PROVIDE OWNERS  
WITH A STATEMENT OF WORKS REQUIRED  
FOR THE WORK TO BE COMPLETED  
INTERNALLY PROVIDED.



TO INPUT CURRENT 6A  
AC INPUT ISOLATOR TERMINALS  
EARTH 0.00V  $\pm$  10%  
SINE  $\sqrt{2}$  5%  
DOOR INTERLOCKED ISOLATOR  
STANDARD RATED 75A  
MINIATURE CIRCUIT BREAKER TYPE "D" CURVE CHARACTERISTIC  
RATED 6A  
TERMINAL BLOCKS  
95% EFFICIENT  
VARNISH IMPREGATED WITH FLAME  
PROOF SIZE 0.000V  
PRIMARY TO SUIT AC INCUIT  
SECONDARY 48.0V AT 4.0 AMPERS

RECTIFIER FUSES TO BS68  
LET TYPE RATED 80A

POSITIVE HALF CONTROLLED FULL WAVE  
THYRISTOR ASSEMBLY C/W FREE WHEEL DIODE  
MOUNTED TO A 35mm PCB

PIV 1200V WITH MOV SURGE DIVERTERS

SMOOTHING CHOKES  
FRAME SIZE 750VA TO SUIT 2 1/2MH  
CAPACITOR RATED 22000PF, 63V TO SUIT  
EQUIPPED WITH BLEED RESISTOR 1K0.10W

3.5 DIGIT RED LED DIGITAL AMPMETER SCALE LENGTH 100mm, SCALED 0-199mV WITH STANDARD 4mm COLOUR CODED TEST SOCKETS  
C/W BRASS ENDED SHUNT (CLASS 1 TO B089/IEC51) RATED 60A 75mV AS STANDARD

DC OUTPUT FUSE TO BS88 LEaded TO SUB  
3.5 DIGIT RED LED DIGITAL VOLTMETER SCALE  
LENGTH 66mm, SCALED 0-109.9V WITH STANDARD  
4mm COLOUR CODED TEST SOCKETS

[illegible]

Rev.	Details	Drawn	Checked	Date
0	ISSUED FOR APPROVAL	SMP	DS	13/03/20
1	REISSUED FOR APPROVAL	SMP	DS	30/03/20
2	REISSUED FOR APPROVAL	SMP	DS	09/04/20
3	REISSUED FOR APPROVAL	SMP	DS	14/05/20
4	REISSUED FOR APPROVAL	SMP	DS	15/05/20
5	REISSUED FOR APPROVAL	SMP	DS	23/06/20

Title	CATHODIC PROTECTION SYSTEM TRANSFORMER				
	RECTIFIER AUTOMATIC 3PH SCHEMATIC				
	CIRCUIT DIAGRAM RATED 50A 50V DC				
	Drawn	Checked	Date	Scale	Size
SHP	DS	13/03/20	NTS	A3	
Drawing No.	Drawing No. Corrupto				
CD-0375-1001	34-501020-DWG-002				
	Rev. 5				

Material AS SUPPLIED



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.03- Motor Datasheets



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)

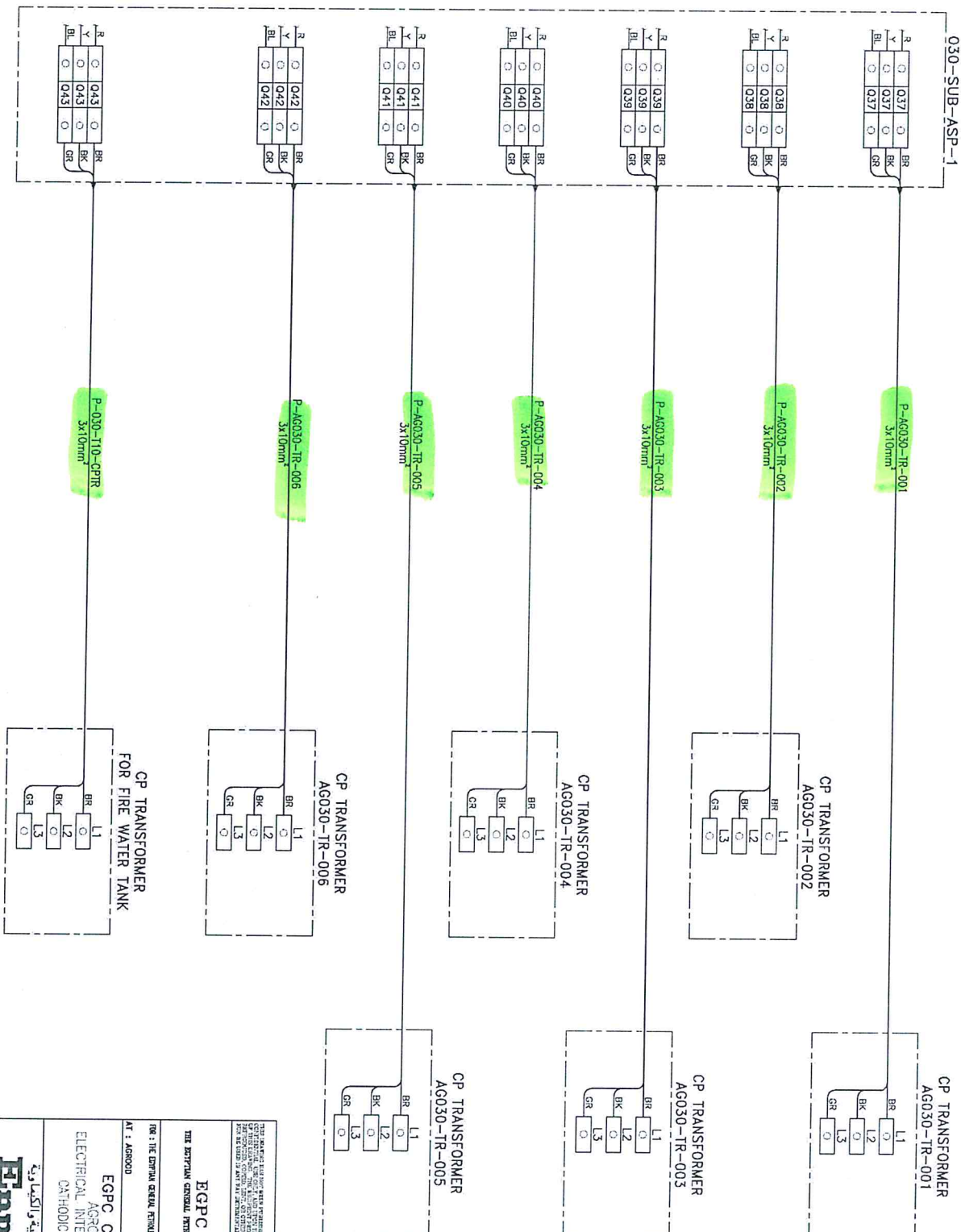


System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.04- Electrical Cables Schedule



PAGE	Cable Mark	GL1	FROM	TO	GL2	CABLE Service	Service Voltage	KW	Size	Type	L
31	P-030-T10-CPTR	WP	030-SUB-ASP-1 (Q37)	CP Transformer for Fire Water Tank	EX	3PH POWER FEEDER	400VAC	2.5	3x10	3C	150
31	P-AG030-TR-001	WP	030-SUB-ASP-1 (Q38)	CP Transformer-1 for U/G Piping	EX	3PH POWER FEEDER	400VAC	2.5	3x10	3C	320
31	P-AG030-TR-002	WP	030-SUB-ASP-1 (Q39)	CP Transformer-2 for U/G Piping	EX	3PH POWER FEEDER	400VAC	2.5	3x10	3C	770
31	P-AG030-TR-003	WP	030-SUB-ASP-1 (Q40)	CP Transformer-3 for U/G Piping	EX	3PH POWER FEEDER	400VAC	2.5	3x10	3C	1230
31	P-AG030-TR-004	WP	030-SUB-ASP-1 (Q41)	CP Transformer-4 for U/G Piping	EX	3PH POWER FEEDER	400VAC	2.5	3x10	3C	880
31	P-AG030-TR-005	WP	030-SUB-ASP-1 (Q42)	CP Transformer-5 for U/G Piping	EX	3PH POWER FEEDER	400VAC	2.5	3x10	3C	330
31	P-AG030-TR-006	WP	030-SUB-ASP-1 (Q43)	CP Transformer-6 for U/G Piping	EX	3PH POWER FEEDER	400VAC	2.5	3x10	3C	240
46	P-030-T01-CPTR	WP	030-EPM1-LVSWG-1 (A2.4)	CP Transformer for Crude Oil Tank	WP	3PH POWER FEEDER	400VAC	15	3x10	3C	130
51	P-030-T02-CPTR	WP	030-EPM2-LVSWG-1 (A2.4)	CP Transformer for Crude Tank	WP	3PH POWER FEEDER	400VAC	15	3x10	3C	130
56	P-030-T03-CPTR	WP	030-EPM3-LVSWG-1 (A2.4)	CP Transformer for Crude Tank	WP	3PH POWER FEEDER	400VAC	15	3x35	3C	300
61	P-030-T04-CPTR	WP	030-EPM4-LVSWG-1 (A2.4)	CP Transformer for Crude Tank	WP	3PH POWER FEEDER	400VAC	15	3x35	3C	330



NOTES:  
1. THE ELECTRICAL INTERCONNECTION AND WIRING DIAGRAM IS THE PROPERTY OF EGPCC. IT IS TO BE USED ONLY FOR THE PROJECT AND NOT TO BE REPRODUCED OR COPIED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF EGPCC.  
2. THE ELECTRICAL INTERCONNECTION AND WIRING DIAGRAM IS TO BE USED ONLY FOR THE PROJECT AND NOT TO BE REPRODUCED OR COPIED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN PERMISSION OF EGPCC.

EGPC  
EGPC  
EGPC

EGPC CRUDE OIL TANK FARM  
AGROD AREA (MODULE-1)  
ELECTRICAL INTERCONNECTION & WIRING DIAGRAM  
CATHODIC PROTECTION TRANSFORMERS

المشروع: محطة التكرير النفطية والخطوط النفطية والكهربائية  
الموقع: بئر بئر السبع

المشروع: محطة التكرير النفطية والخطوط النفطية والكهربائية  
الموقع: بئر بئر السبع

SCALE: NONE  
DOCUMENT NUMBER: 01251-100-030-EWI-001  
SHEET: 1  
REVISION: 1



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.05- Electrical Cables Laying Certificates






Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)




System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.06- Electrical Cables Testing Certificates



EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

INSPECTION REPORT NUMBER

RFI- 262

INSPECTION DATE & TIME

DOCUMENT No.

ITR-EL-0006A

DISCIPLINE

ELECTRICAL

SHEET NO

SYSTEM NO.:

INSTRUMENT TYPE:

SERIAL:

SERVICE VOLTAGE:

220 v

TEST VOLTAGE:

1kv

AREA / PACKAGE:

Remarks :-

Reference :-

NAME :

SIGNATURE



DATE

Islam Sherif

PETROJET

ENPPI

PMC

ITR-EL-0006A





Enppi

EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

INSPECTION REPORT NUMBER

REF: 177

INSTRUMENT TYPE:

SERIAL:

INSPECTION DATE & TIME

DOCUMENT No  
ITR-EL-0006A

SYSTEM NO:

SHEET NO

DISCIPLINE  
ELECTRICAL

TEST VOLTAGE:

1kv

SERVICE VOLTAGE:

220 v

N O	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE "M Ohm"			PHASE TO NUETRAL "M Ohm"			PHASES & NUETRAL TO ARMOR "M Ohm"			RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass Fail
1	P-AG030-TR-004	3x10	✓				0.8							✓
2	P-AG030-TR-005	3x10	✓				0.8							✓
3	P-AG030-TR-006	3x10	✓				0.8							✓
4	P-AG030-TR-007	3x10	✓				0.8							✓
5	P-AG030-TR-008	3x10	✓				0.8							✓
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														

Remarks :-

Reference :-

PETROJET		ENPP		PMC
NAME :				
SIGNATURE				
DATE				

ITR-EL-0006A

# CABLE INSULATION RESISTANCE TEST

INSPECTION REPORT NUMBER

PTJ-ELE-RF- 214

INSTRUMENT TYPE:

HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000

INSPECTION DATE & TIME

13/06/2021

DOCUMENT NO

ITR-EL-0006A

DISCIPLINE

ELECTRICAL

SHEET NO

1

SERIAL:

17015900385

SERVICE VOLTAGE: 400

TEST VOLTAGE: 1000

AREA / PACKAGE:

SUBSTATION

SUBSTATION															
NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE			PHASE TO NEUTRAL "M.Ohm"			PHASES & NEUTRAL TO ARMOR			RESULT		
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
16	M-030-MXM-04E, JB	3x95	✓											✓	
17	M-030-MXM-04E	3x50	✓											✓	
18	M-030-MXM-04F, JB	3x95	✓											✓	
19	M-030-MXM-04F	3x50	✓											✓	
20	P-030-SW-004	3x4	✓											✓	
21	P-030-LI-004C	3x4	✓											✓	
22	P-AG030-TR-003	3x10	✓											✓	
23	P-030-T04-CPTR	3x35	✓											✓	
24	P-030-SOV-104	4 X 4	✓											✓	
25															
26															
27															
28															
29															
30															
31															

Remarks :-

Reference :-





Enppi

EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

CABLE INSULATION RESISTANCE TEST

INSPECTION REPORT NUMBER  
PTJ-ELE-RF1

INSTRUMENT TYPE:  
HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000

SERIAL:

17015900385

INSPECTION DATE & TIME

03/07/2021

DOCUMENT No  
ITR-EL-0006A

DISCIPLINE  
ELECTRICAL

SYSTEM NO.:

SHEET NO

TEST VOLTAGE: 400  
TEST VOLTAGE: 1000  
SUBSTATION

NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE			PHASE TO NEUTRAL "M.Ohm"			PHASES & NEUTRAL TO ARMOR			RESULT	
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	Pass	FAIL
1	P-AG030-TR-002	3x10	✓	OL	OL	OL							✓	
2	N1-030-EPM2-LTG	3x10	✓	OL	OL	OL							✓	
3	P-030-T02-CPTR	3x10	✓										✓	
4	P1-030-EPM2-CR-1	3x16	✓										✓	
5	P-030-SW-002	3x4	✓										✓	
6	P-030-LI-002C	3x4	✓										✓	
7	M-030-MXM-02A	3x50	✓										✓	
8	M-030-MXM-02B	3x50	✓										✓	
9	M-030-MXM-02C	3x50	✓										✓	
10	M-030-MXM-02D	3x50	✓										✓	
11	M-030-MXM-02E	3x50	✓										✓	
12	M-030-MXM-02F	3x50	✓										✓	
13	M-030-MXM-02A, JB	3x95	✓										✓	
14	M-030-MXM-02B, JB	3x95	✓										✓	
15	M-030-MXM-02C, JB	3x95	✓										✓	
16	M-030-MXM-02D, JB	3x95	✓										✓	
17	M-030-MXM-02E, JB	3x95	✓										✓	
18	M-030-MXM-02F, JB	3x95	✓										✓	

Remarks :-

Reference :-

PETROJET		ENRPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-EL-0006A





Enppi

EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## CABLE INSULATION RESISTANCE TEST

INSPECTION REPORT NUMBER

PTJ-ELE-RFI-

INSPECTION DATE & TIME

28/06/2021

DOCUMENT No.

ITR-EL-0006A

DISCIPLINE

ELECTRICAL

SYSTEM NO.:

SHEET NO

INSTRUMENT TYPE:

SERIAL:

17015900385

SERVICE VOLTAGE: 400

HIGH VOLTAGE INSULATION TESTER-SANWA-MG5000

TEST VOLTAGE: 1000

AREA / PACKAGE:

SUBSTATION

SUBSTATION															
NO	Item/Tag NO.	CABLE SIZE	Continuity Test	PHASE TO PHASE			PHASE TO NUTRAL "M.Ohm"			PHASES & NUTRAL TO ARMOR			RESULT		
				BR-BK	BR-GR	BK-GR	BR-B	BK-B	GR-B	BR-ARM	BK-ARM	GR-ARM	B-ARM	Pass	FAIL
19	C1-030-PM-06B	12x2.5	✓	Phase to Phase (a.l.)										✓	
20	C3-030-PM-06B	8x(3x2.5)	✓												✓
21	H-030-PM-06C	3x10	✓												✓
22	C1-030-PM-06C	12x2.5	✓												✓
23	C3-030-PM-06C	8x(3x2.5)	✓												✓
24	H-030-PM-06D	3x10	✓												✓
25	C1-030-PM-06D	12x2.5	✓												✓
26	C3-030-PM-06D	8x(3x2.5)	✓												✓
27	M-030-PM-03A	3x35	✓												✓
28	C1-030-PM-03A	10x2.5	✓												✓
29	C3-030-PM-03A	1x3x2.5	✓												✓
30	M-030-PM-03B	3x35	✓												✓
31	C1-030-PM-03B	10x2.5	✓												✓
32	C3-030-PM-03B	1x3x2.5	✓												✓
33	P-030-T10-CPTR	3x10	✓												✓
34	P-AG030-TR-001	3x10	✓												✓
35	P-AG030-TR-006	3x10	✓												✓
36	P-030-MOV-004	4x4	✓											✓	

Remarks :-

Reference :-

PETROJET

ENPPI

PMC

Sad

R. H.



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.07- Electrical Cables Termination Certificates

**Enppi**

EGPC CRUDE OIL TANK FARM



Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030  
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**

ACTIVITY : CABLE TERMINATION AND SPLICING

NOTIFICATION NO. : PTJ-ELEC-RFI- 262 DISCIPLINE : E&amp;I

DATE : 10/23/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	CABLE TERMINATION AND SPLICING	MODULE 1	23-Oct-21				
1	P-030-SUB-ACUPS-1A						
2	P-030-SUB-ACUPS-1B						
3	P-030-SUB-ACUPS-BP						
4	C-030-SUB-PC-1						
5	P-030-T01-CPTR						
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							

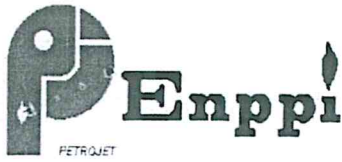
**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-QC-0001





# EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## CABLE TERMINATION AND SPLICING

SYSTEM NO.:

INSPECTION REPORT NUMBER

INSPECTION DATE & TIME

ITR NUMBER

DISCIPLINE

SHEET NO

ITR-EL-0009

ELEC

1 OF 1

Item/Tag NO.

Type :-

Core:

Size:

NO.	Description of check	RESULT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *I	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *II			✓
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications	✓		
9	Check enclosure cover is installed, no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.			✓

Remarks :

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-EL-0009

**Enppi**

EGPC CRUDE OIL TANK FARM



Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030  
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**

ACTIVITY : Test Post / ANODE Installation

NOTIFICATION NO. : PTJ-ELE-RFI-178

DISCIPLINE : Cathodic

DATE : 4/26/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	Test Post/ANODE Installation	AGROOD #01					
16	ANODE 125						
17	ANODE 126						
18	ANODE 127						
19	CONNECTION POINT 4						
20	CONNECTION POINT 9						
21	AG030-TR-004						
22	ANODE J B						
23	NEGATIVE J B						
24	AG030-TR-005						
25	ANODE J B						
26	NEGATIVE J B						
27	030-T03-CPTR						
28	2 ANODE J B						
29	NEGATIVE J B						
30	030-T04-CPTR						

**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			

INSPECTION AND TEST REPORT FOR

MMO ANOD INSTALLATION

INSPECTION REPORT NUMBER  
ITR-CP-0006

INSPECTION DATE & TIME

DOCUMENT No.  
ITR-CP-0006

DISCIPLINE  
ELECTRICAL

SHEET NO  
1 OF 1

JOB DESCRIPTION

PIPELINE CATHODIC PROTECTION SYSTEM

AREA DESCRIPTION

AGROUD MODULE 2 PIPELINE

ITEM / TAG NO.



DRAWING NO.

1251-100-S30-D99-0006

LOCATION

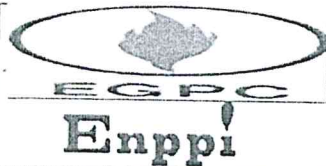
NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Anode installation area free from metallic debris prior to installation and level	✓		
2	Anode visually inspected for damage prior to installation	✓		
3	MMO installed as relevant drawing	✓		
4	Conductor Bar installed as relevant drawing	✓		
5	Continuity test shall be conducted between Conductor bar and MMO anode prior to backfilling			✓
6	All spot welding at crossing locations visually inspected and checked			✓
7	Power feed connectors installed at correct locations as relevant drawing			✓
8	Power feed cables have no physical damage with sufficient slack cable to permit exit from ring beam and termination in junction box	✓		
9	Continuity test shall be conducted for all Power feed cables before and after backfilling.			✓
10	No Interference or contact with the tank external surfaces			✓
11	Cable routing	✓		
12	Carefully backfill sand over anode to required depth under the tank which is free from rocks, boulders and metallic debris	✓		
13	Output current measurement at power feed cables			✓
14	Waste materials removed from site	✓		

REMARKS:

CONSORTIUM (ENPPI /PETROJET )		EGPC	
NAME		NAME	
SIGNATURE		SIGNATURE	
DATE		DATE	

ITR-CP-0006





#REF!



PETROJET  
The Petroleum Projects and  
Technical Consultations Co.  
One of the Egyptian General Petroleum  
Corporation Companies

INSPECTION AND TEST REPORT FOR

## TRANSFORMER RECTIFIER INSTALLATION

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

DOCUMENT No.

DISCIPLINE

SHEET NO

ITR-CP-0003

ELECTRICAL

1 OF 1

JOB DESCRIPTION

AREA DESCRIPTION



ITEM / TAG NO

DRAWING NO.

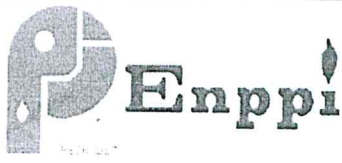
LOCATION

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Correct transformer rectifier installed and at correct location	✓		
2	Location of junction box and precast foundation to be identified	✓		
3	Transformer rectifier is properly secured on the concrete plinch and positioned with easy access for monitoring and adjustment	✓		
4	Terminated cables were provided with sufficient slack to permit cables to be removed from the connection terminals	✓		
5	Installation of junction box and identification	✓		
6	Cable identification and termination as per approved IFC drawing	✓		
7	All other TR UNIT external components (silica gel breather, thermometer, oil indicator, sunshade, etc) are secured and inspected any physical damage	✓		
8	Specified T/R cooling oil is filled to the recommended oil level	✓		
9	T/R unit is completely installed without any physical damage (internal or external) and with proper earthing	✓		
10	Final visual inspection	✓		

REFERENCE DOCUMENTS:

CONSORTIUM ( ENPPI / PETROJET		EGPC	
NAME		NAME	
SIGNATURE		SIGNATURE	
DATE		DATE	

ITR-CP-0003



EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## TERMINAL BOXES AND TEST STATIONS INSTALLATION

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

DOCUMENT No

DISCIPLINE

SHEET NO

RFI 178

ELECTRICAL

1 OF 1

JOB DESCRIPTION

AREA DESCRIPTION

TERMINAL BOXES AND TEST STATIONS INSTALLATION

ITEM / TAG NO

DRAWING NO

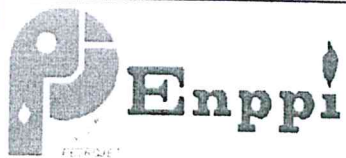
LOCATION

TP 4.3

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Connection areas cleaned to bright metal	✓		
2	Visual examination of connection	✓		
3	Cable to Structure connection encapsulated and sealed with suitable coating repair/insulation material	✓		
4	Check terminal boxes, test station type and installed location			✓
5	Terminal boxes, test station installed without any damages			✓
6	Cable terminated with sufficient slack (where possible) to permit cables to be removed from the connection terminals			✓
7	Cables are correctly terminated inside the junction box and correctly identified with permanent cable tag			✓
8	Cable glands are securely fitted around cables and blanking plugs fitted where necessary			✓
9	Terminal boxes, test station & mounting frame secured in the concrete footing			✓
10	Terminal boxes, test stations are installed at sufficient height from the ground level			✓
11	Final visual inspection	✓		

REMARKS:

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			



EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## TERMINAL BOXES AND TEST STATIONS INSTALLATION

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

DOCUMENT No.

DISCIPLINE

SHEET NO

RPI 178

ELECTRICAL

1 OF 1

JOB DESCRIPTION

AREA DESCRIPTION

TERMINAL BOXES AND TEST STATIONS INSTALLATION

ITEM / TAG NO

DRAWING NO.

LOCATION

Junction Boxes

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Connection areas cleaned to bright metal	✓		
2	Visual examination of connection	✓		
3	Cable to Structure connection encapsulated and sealed with suitable coating repair/insulation material	✓		
4	Check terminal boxes, test station type and installed location	✓		
5	Terminal boxes, test station installed without any damages	✓		
6	Cable terminated with sufficient slack (where possible) to permit cables to be removed from the connection terminals	✓		
7	Cables are correctly terminated inside the junction box and correctly identified with permanent cable tag	✓		
8	Cable glands are securely fitted around cables and blanking plugs fitted where necessary	✓		
9	Terminal boxes, test station & mounting frame secured in the concrete footing	✓		
10	Terminal boxes, test stations are installed at sufficient height from the ground level	✓		
11	Final visual inspection	✓		

REMARKS:

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			





**Enppi**  
PETROJET

EGPC CRUDE OIL TANK FARM



Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030  
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001  
Revision No. : 00

## REQUEST FOR INSPECTION

ACTIVITY : CATHODIC PROTECTION TRANSFORMER & JB INSTALLATION

NOTIFICATION NO. : PTJ-elec-RFI- 226 DISCIPLINE : E&I

DATE : 6/26/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	CATHODIC PROTECTION TRANSFORMER & JB INSTALLATION	MODULE 1	26-Jun-21				
1	AG030-TR-002						
1.1	NJB2						
1.2	AJB2						
1.3	<del>ASB2</del>						
2	AG030-TR-006						
2.1	NJB6						
2.2	AJB6						
3	AG030-TR-001						
3.1	NJB1						
3.2	AJB1						
3.3	<del>ASB1</del>						
4	030-T10-CPTR						
4.1	NJB						
4.2	AJB						
5.1	030-T02-CPTR						
5.2	2 AJB						
5.3	NJB						
	030-T01-CPTR	AG030-TR-003					
	2 AJB	NJB03					
	NJB	AJB03					

NOTE:

Inspection result : A - Approved B - Reject C - Approved with Comment

Marked-up to be done Supplier checklist to be followed

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-QC-0001



# EGPC CRUDE OIL TANK FARM



PETROJET  
The Petroleum Projects and  
Technical Consultations Co.  
One of the Egyptian General Petroleum  
Corporation Companies

INSPECTION AND TEST REPORT FOR

## TRANSFORMER RECTIFIER INSTALLATION

INSPECTION REPORT NUMBER

226

INSPECTION DATE & TIME

DOUCUMENT No.

ITR-CP-0003

DISCIPLINE

ELECTRICAL

SHEET NO

1 OF 1

JOB DESCRIPTION

AREA DESCRIPTION

ITEM / TAG NO.

DRAWING NO.

LOCATION

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Correct transformer rectifier installed and at correct location	✓		
2	Location of junction box and precast foundation to be identified	✓		
3	Transformer rectifier is properly secured on the concrete plinch and positioned with easy access for monitoring and adjustment	✓		
4	Terminated cables were provided with sufficient slack to permit cables to be removed from the connection terminals	✓		
5	Installation of junction box and identification	✓		
6	Cable identification and termination as per approved IFC drawing	✓		
7	All other TR UNITexternal components (silica gel breather, thermometer, oil indicator, sunshade, etc) are secured and inspected any physical damage	✓		
8	Specified T/R cooling oil is filled to the recommended oil level	✓		
9	T/R unit is completely installed without any physical damage (internal or external) and with proper earthing	✓		
10	Final visual inspection	✓		

### REFERENCE DOCUMENTS:

PETROJET		ENPPI	
NAME:		NAME	
SIGNATURE		SIGNATURE	
DATE		DATE	

ITR-CP-0003





# EGPC CRUDE OIL TANK FARM



PETROJET  
The Petroleum Projects and  
Technical Consultations Co.  
One of the Egyptian General Petroleum  
Corporation Companies

## INSPECTION AND TEST REPORT FOR

## TERMINAL BOXES AND TEST STATIONS INSTALLATION

INSPECTION REPORT NUMBER 226	INSPECTION DATE & TIME	DOCUMENT No. ITR-CP-0004	DISCIPLINE ELECTRICAL	SHEET NO 1 OF 1
---------------------------------	------------------------	-----------------------------	--------------------------	--------------------

JOB DESCRIPTION

AREA DESCRIPTION

ITEM / TAG NO.

DRAWING NO.

LOCATION

NO.	INSPECTION	RESULT		
		ACCEPT	REJECT	N/A.
1	Check terminal boxes, test station type and installed location	✓		
2	Terminal boxes, test station installed without any damages	✓		
3	Cable terminated with sufficient slack (where possible) to permit cables to be removed from the connection terminals	✓		
4	Cables are correctly terminated inside the junction box and correctly identified with permanent cable tag	✓		
5	Cable glands are securly fitted around cables and blanking plugs fitted where necessary	✓		
6	Terminal boxes, test station & mounting frame secured in the concrete footing	✓		
7	Terminal boxes, test stations are installed at sufficient height from the ground level	✓		
8	Final visual inspection	✓		

REMARKS:

PETROJET

NAME:

SIGNATURE

DATE

NAME

SIGNATURE

DATE

ENPPI

ITR-CP-0004



**Enppi**

EGPC CRUDE OIL TANK FARM



Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030  
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**

ACTIVITY : cable termination and splicing

NOTIFICATION NO. : PTJ-ELEC-RFI-179 DISCIPLINE : E&amp;I

DATE : 4/26/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
	cable termination	MODULE 1	26-Apr-21				
1	P-AG030-TR-004						
2	P-AG030-TR-008						
3	P-030-103-C PIR						
4	<del>XXXXXXXXXX</del>						
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							

NOTE: 1- plugs to be installed in transformer side (Done) 5th  
2- S.S tag for the cables to be installed (pending)

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME		Sherrif	
SIGNATURE			
DATE			

ITR-QC-0001



## EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## CABLE TERMINATION AND SPLICING

SYSTEM NO.:

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

ITR NUMBER

DISCIPLINE

SHEET NO

PT. OF USE: REF-173

ITR-EL-0009

ELEC

1 OF 1

Item/Tag NO.

Type :-

Core:

Size:

NO.	Description of check	RESULT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *1	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *11			✓
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications			✓
9	Check enclosure cover is installed, no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.	✓		

Remarks :

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-EL-0009



**Enppi****EGPC CRUDE OIL TANK FARM**

Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030  
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**

ACTIVITY : CABLE TERMINATION AND TEST

NOTIFICATION NO. : PTJ-ELE-RFI-230 DISCIPLINE : ELEC

DATE : 28/06/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
18	H-030-PM-06B	SUBSTAION					
19	C1-030-PM-06B	SUBSTAION					
20	C3-030-PM-06B	SUBSTAION					
21	H-030-PM-06C	SUBSTAION					
22	C1-030-PM-06C	SUBSTAION					
23	C3-030-PM-06C	SUBSTAION					
24	H-030-PM-06D	SUBSTAION					
25	C1-030-PM-06D	SUBSTAION					
26	C3-030-PM-06D	SUBSTAION					
27	M-030-PM-03A	SUBSTAION					
28	C1-030-PM-03A	SUBSTAION					
29	C3-030-PM-03A	SUBSTAION					
30	M-030-PM-03B	SUBSTAION					
31	C1-030-PM-03B	SUBSTAION					
32	C3-030-PM-03B	SUBSTAION					
33	P-030-T10-CPTR	SUBSTAION	✓				
34	P-AG030-TR-001	SUBSTAION	✓				
35	P-AG030-TR-006	SUBSTAION	✓				

**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-QC-0001



## EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## CABLE TERMINATION AND SPLICING

SYSTEM NO.:

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

ITR NUMBER

DISCIPLINE

SHEET NO

PTJ-ELE-RFI- 230

03/07/2021

ITR-EL-0009

ELEC

1 OF 1

Item/Tag NO.

For All Cables tags in PTJ-ELE-RFI-

Type :-

Core:

Size:

NO.	Description of check	RESULT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.	✓		
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *I	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *II			✓
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications	✓		
9	Check enclosure cover is installed, no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.	✓		

Remarks :

\*I : ITR-EL-006A/B

\*II : ITR-EL-008

	PETROJET	ENPPI	PMC
NAME			
SIGNATURE			
DATE			

ITR-EL-0009



**Enppi****EGPC CRUDE OIL TANK FARM**Owner : **Egyptian General Petroleum Corporation (EGPC)-**Project No: 01251-100-030  
:01251-100-031Contractor **CONSORTIUM (ENPPI / PETROJET)**Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**ACTIVITY : **CABLE TERMINATION AND TEST**NOTIFICATION NO. : **PTJ-ELE-RFI- 214** DISCIPLINE : **ELEC**DATE : **13/06/2021**

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
18	M-030-MXM-04E	FIELD					
19	C1-030-MXM-04E	FIELD					
20	C3-030-MXM-04E	FIELD					
21	M-030-MXM-04F, JB	FIELD					
22	M-030-MXM-04F	FIELD					
23	C1-030-MXM-04F	FIELD					
24	C3-030-MXM-04F	FIELD					
25	P-030-SW-004	FIELD					
26	P-030-LI-004C	FIELD					
27	P1-030-EPM4-CR-1	FIELD					
28	L1-030-EPM4-FT	FIELD					
29	L2-030-EPM4-FT	FIELD					
30	L3-030-EPM4-FT	FIELD					
31	N1-030-EPM4-LTG	FIELD					
32	E1-030-EPM4-LTG	FIELD					
33	E2-030-EPM4-LTG	FIELD					
34	P-AG030-TR-003	FIELD					
35	P-030-T04-CPTR	FIELD					

NOTE: **P-030-SOV-104**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE	<i>Sak</i>	<i>Islam Sherif</i>	<i>M. Omay</i>
DATE			

ITR-QC-0001



## EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## CABLE TERMINATION AND SPLICING

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

ITR NUMBER

SYSTEM NO.:

PTJ-ELE-RFI-

214

13/06/2021

ITR-EL-0009

DISCIPLINE

ELEC

SHEET NO

1 OF 1

Item/Tag NO.

For All Cables tags in PTJ-ELE-RFI-

Type :-

Core:

Size:

NO.	Description of check	RESULT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.		✓	
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed *I	✓		
6	Check Hi-pot test is completed, only for MV/HV cables *II			✓
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications	✓		
9	Check enclosure cover is installed, no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.			✓

Remarks :

\*I : ITR-EL-006A/B

\*II : ITR-EL-008

NAME	PETROJET	ENRPI	PMC
SIGNATURE			
DATE			

ITR-EL-0009



**Enppi****EGPC CRUDE OIL TANK FARM**

Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030  
:01251-100-031

Contractor : CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**

ACTIVITY : CABLE TERMINATION AND TEST

NOTIFICATION NO. : PTJ-ELE-RFI- 232 DISCIPLINE : ELEC

DATE : 03/07/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
1	P-AG030-TR-002	FIELD					
2	P1-030-EPM2-CR-1	FIELD					
3	L1-030-EPM2-FT	FIELD					
4	L2-030-EPM2-FT	FIELD					
5	L3-030-EPM2-FT	FIELD					
6	N1-030-EPM2-LTG	FIELD					
7	E1-030-EPM2-LTG	FIELD					
8	E2-030-EPM2-LTG	FIELD					
9	M-030-MXM-02A, JB	FIELD					
10	M-030-MXM-02A	FIELD					
11	C1-030-MXM-02A	FIELD					
12	C3-030-MXM-02A	FIELD					
13	M-030-MXM-02B, JB	FIELD					
14	M-030-MXM-02B	FIELD					
15	C1-030-MXM-02B	FIELD					
16	C3-030-MXM-02B	FIELD					
17	M-030-MXM-02C, JB	FIELD					

**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-QC-0001

**Enppi****EGPC CRUDE OIL TANK FARM**

Owner : Egyptian General Petroleum Corporation (EGPC)

Project No: 01251-100-030  
:01251-100-031

Contractor CONSORTIUM (ENPPI / PETROJET)

Document No: ITR-QC-0001  
Revision No. : 00**REQUEST FOR INSPECTION**

ACTIVITY : CABLE TERMINATION AND TEST

NOTIFICATION NO. : PTJ-ELE-RFI- 232 DISCIPLINE : ELEC

DATE : 03/07/2021

NO.	DESCRIPTION	LOCATION	DATE / TIME	INSPECTION			REMARKS
				PETROJET	ENPPI	PMC	
18	M-030-MXM-02C	FIELD					
19	C1-030-MXM-02C	FIELD					
20	C3-030-MXM-02C	FIELD					
21	M-030-MXM-02D, JB	FIELD					
22	M-030-MXM-02D	FIELD					
23	C1-030-MXM-02D	FIELD					
24	C3-030-MXM-02D	FIELD					
25	M-030-MXM-02E, JB	FIELD					
26	M-030-MXM-02E	FIELD					
27	C1-030-MXM-02E	FIELD					
28	C3-030-MXM-02E	FIELD					
29	M-030-MXM-02F, JB	FIELD					
30	M-030-MXM-02F	FIELD					
31	C1-030-MXM-02F	FIELD					
32	C3-030-MXM-02F	FIELD					
33	P-030-T02-CPTR	FIELD					
34	P-030-SDV-102	FIELD					
35	P-030-SW-002	FIELD					
36	P-030-LI-002C	FIELD					

**NOTE:**

Inspection result : A - Approved B - Reject C - Approved with Comment

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-QC-0001





EGPC CRUDE OIL TANK FARM



INSPECTION AND TEST REPORT FOR

## CABLE TERMINATION AND SPLICING

SYSTEM NO.:

INSPECTION REPORT NUMBER

INSPECTION DATE &amp; TIME

ITR NUMBER

DISPLINE

SHEET NO

PTJ-ELE-RFI- 232

14/06/2021

ITR-EL-0009

ELEC

1 OF 1

Item/Tag NO.

For All Cables tages in PTJ-ELE-RFI-

Type :-

Core:

Size:

NO.	Description of check	RESUNT		
		ACCEPT	REJECT	N/A.
1	Check cable glands are correct type and size as per cable schedule.	✓		
2	Check there are no damages to cores, termination chamber layout is satisfactory, core identification is correct, crimped and pins satisfactory.	✓		
3	Check cable tag is done correctly.		✓	
4	Test and confirm conductor, phase continuity.	✓		
5	Check insulation resistance test (megger) is completed * <sup>1</sup>	✓		
6	Check Hi-pot test is completed, only for MV/HV cables * <sup>11</sup>			✓
7	Connect all cores at both ends and confirm all connections are correct as per termination diagram.	✓		
8	Confirm spare cores, screens are earthed and conform to design drawings/specifications	✓		
9	Check enclosure cover is installed , no damages and no bolts are missing	✓		
10	Calibration test certificate of testing equipment to be checked.			✓

Remarks :

\*<sup>1</sup> : ITR-EL-006A/B\*<sup>11</sup> : ITR-EL-008

	PETROJET	ENPPI	PMC
NAME :			
SIGNATURE			
DATE			

ITR-EL-0009



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.08- FAT Reports & Certificates





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.09- SAT Reports & Certificates

# PLANT PIPING CATHODIC PROTECTION SYSTEM PRE-COMMISSIONING AS-FOUND POTENTIALS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC

**corrpro**  
an AEGION company

S.No.	Test Station ID	Pipe As-Found Potential (mV) with portable RE	Pipe As-Found Potential (-mV) with permanent RE	Magnesium Open Circuit Potential (-mV)	Magnesium Current (A)	Continuity between pipe cable 1 and pipe cable 2 (ohms)	Coupon (-mV)		AC Potential (V)	Portable RE to Permanent RE (mV)	Reed Switch Functioning (Yes/No)	Remarks
							On	Off				
1	TS-1	462	459	-	-	0.1	461	624	0	3.3	Yes	
2	TS-2	459	463	-	-	0.1	458	510	0	3	Yes	
3	TS-3	445	715	1573	0.065	0.2	443	375	0	276.9	Yes	Concreted Area
4	TS-4	446	526	1566	0.019	0.1	446	461	0	79.9	Yes	Concreted Area
5	TS-5	431	396	-	-	0.5	431	594	0	33.4	Yes	Concreted Area
6	TS-6	485	465	-	-	0.1	486	496	0	21.3	Yes	
7	TS-7	491	456	-	-	0.1	494	596	0	33	Yes	
8	TS-8	485	678	1556	0.073	0.3	482	630	0	193.9	Yes	
9	TS-9	469	454	-	-	0.2	469	623	0	15.6	Yes	
10	TS-10	733	547	1601	0.012	0.3	732	571	0	176	Yes	
11	TS-11	649	572	1583	0.028	0.1	643	512	0	72.2	Yes	
12	TS-12	504	511	-	-	0.1	504	464	0	6.9	Yes	
13	TS-13	510	457	-	-	0.1	510	475	0	11.5	Yes	
14	TS-14	586	808	1530	0.02	0.4	584	428	0	225.6	Yes	
15	TS-15	475	427	-	-	0.1	475	388	0	41.9	Yes	
16	TS-16	491	498	1499	0.028	0.1	490	514	0	8.6	Yes	anode cable was not connected
17	TS-17	474	355	-	-	0.1	474	549	0	119.6	Yes	
18	TS-18	975	713	1609	0.04	0.1	975	885	0	257.7	Yes	
19	TS-19	486	486	-	-	0.1	486	590	0	0.6	Yes	
20	TS-20	477	481	1559	0.064	0.1	476	575	0	4.3	Yes	anode cable was not connected
21	TS-21	504	506	-	-	0.1	504	470	0	1.6	Yes	
22	TS-22	435	350	-	-	0.1	435	446	0.022	28.7	Yes	
23	TS-23	448	451	-	-	0.1	448	641	0.021	2.4	Yes	
24	TS-24	466	474	-	-	0.1	466	614	0	9.9	Yes	
25	TS-25	471	445	-	-	0.1	464	495	0.022	29.1	Yes	
26	TS-26	455	451	-	-	0.1	455	581	0.021	2.4	Yes	
27	TS-27	437	372	1551	0.046	0.1	437	418	0.026	44	Yes	anode cable was not connected
28	TS-28	446	331	-	-	0.1	446	425	0.021	51.3	Yes	
29	TS-29	450	358	-	-	0.1	448	546	0	20.8	Yes	
30	TS-30	469	488	-	-	0.1	469	475	0	18.4	Yes	
31	TS-31	465	473	-	-	2400000	465	322	0	8.5	Yes	
32	TS-32	435	389	1362	0.028	0.1	435	450	0	25.8	Yes	
33	TS-33	470	453	-	-	0.1	470	461	0	14.6	Yes	
34	TS-34	474	487	-	-	0.1	473	581	0	13.1	Yes	
35	TS-35	501	421	-	-	0.6	502	453	0	33.7	Yes	TP terminated outside of bund wall
36	TS-36	406	557	1507	0.011	0.5	407	260	0	150.1	Yes	TP terminated outside of bund wall
37	TS-37	476	465	-	-	0.4	476	528	0.024	5.1	Yes	
38	TS-38	465	430	1549	0.015	0.4	465	546	0	33.4	Yes	
39	TS-39	472	469	-	-	0.4	472	510	0	2.6	Yes	
40	TS-40	474	464	-	-	0.2	471	422	0.024	7.2	Yes	

For Corrpro

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Name- Amr Jassid  
Date- 23/11/2021

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Date- 23/11/2021

For PPC

Signature:   
Name- Mohamed Ibrahim  
Date- 




# PLANT PIPING CATHODIC PROTECTION SYSTEM PRE-COMMISSIONING AS-FOUND POTENTIALS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC

**corrpro**  
an AEGION company

S.No.	Test Station ID	Pipe As-Found Potential (-mV) with portable RE	Pipe As-Found Potential (-mV) with permanent RE	Magnesium Open Circuit Potential (-mV)	Magnesium Current (A)	Continuity between pipe cable 1 and pipe cable 2 (ohms)	Coupon (-mV)		AC Potential (V)	Portable RE to Permanent RE (mV)	Reed Switch Functioning (Yes/No)	Remarks
							On	Off				
41	TS-41	475	430	-	-	0.1	473	433	0.024	41.5	Yes	
42	TS-42	608	618	1593	0.041	0.2	606	459	0	10.4	Yes	
43	TS-43	389	545	1568	0.016	0.1	385	285	0	160.8	Yes	
44	TS-44	466	481	-	-	0.2	466	368	0	15	Yes	
45	TS-45	465	475	-	-	0.1	465	422	0	9.8	Yes	
46	TS-46	476	481	-	-	0.3	473	362	0	6.2	Yes	
47	TS-47	461	471	-	-	0.1	461	436	0	10.1	Yes	
48	TS-48	528	761	1526	0.016	0.1	527	427	0	249	Yes	
49	TS-49	481	476	-	-	0.1	485	471	0	5.7	Yes	
50	TS-50	469	468	-	-	0.1	468	443	0	0.4	Yes	
51	TS-51	469	418	-	-	0.2	468	412	0	27.5	Yes	
52	TS-52	463	458	-	-	0.3	465	476	0	2.4	Yes	
53	TS-53	483	493	-	-	0.1	484	594	0	9.8	Yes	
54	TS-54	722	1186	1580	0.016	0.2	722	633	0	466.9	Yes	
55	TS-55	492	286	-	-	0.1	492	506	0	40.8	Yes	TP terminated outside of bund wall
56	TS-56	496	421	-	-	0.4	496	409	0	64	Yes	TP terminated outside of bund wall
57	TS-57	497	477	-	-	0.3	497	428	0	15.6	Yes	TP terminated outside of bund wall
58	TS-58	582	512	1533	0.002	0.3	582	389	0	0.7	Yes	TP terminated outside of bund wall
59	TS-59	465	417	-	-	0.1	464	503	0	43.6	Yes	
60	TS-60	569	579	-	-	0.6	569	548	0	9.6	Yes	TP terminated outside of bund wall
61	TS-61	501	522	-	-	0.2	501	920	0	21.4	Yes	TP terminated outside of bund wall
62	TS-62	465	448	-	-	0.1	465	519	0	16.1	Yes	
63	TS-63	507	537	-	-	0.5	507	476	0	24.8	Yes	TP terminated outside of bund wall
64	TS-64	412	438	-	-	0.1	412	335	0.021	27.3	Yes	
65	TS-65	408	563	1616	0.036	14.6	408	434	0	243.8	Yes	TP terminated outside of bund wall
66	TS-66	399	183	-	-	0.3	398	474	0	214.7	Yes	TP terminated outside of bund wall

For Corpro

Signature-   
Name- Ahmed Jawaid  
Date- 23/11/2021

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Signature-   
Name- Mohamed Hekson  
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Name- Mohamed Z. Ibrahim  
Date- 




# PLANT PIPING CATHODIC PROTECTION SYSTEM PRE-COMMISSIONING DEPOLARIZED POTENTIALS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC

**corrpro**  
an AEGION company

S.No.	Test Station ID	Pipe Depolarized Potential (-mV) with portable RE	Pipe Depolarized Potential (-mV) with permanent RE	Magnesium Open Circuit Potential (-mV)	Coupon (-mV)	AC Potentail (V)	Portable RE to Permanent RE (mV)	Remarks
1	TS-1	429	427	-	429	0	1.8	
2	TS-2	427	432	-	427	0	5.3	
3	TS-3	352	354	-	200	0	10.8	
4	TS-4	310	364	1556	310	0	55.7	
5	TS-5	425	391	1528	426	0	33	
6	TS-6	442	433	-	442	0	10.8	
7	TS-7	461	425	1564	461	0	36	
8	TS-8	323	307	1590	322	0	16	
9	TS-9	435	419	-	435	0	14.2	
10	TS-10	431	412	-	205	0	22.4	
11	TS-11	467	457	1527	341	0	3.5	
12	TS-12	472	480	-	414	0	7.4	
13	TS-13	512	456	-	439	0	10.9	
14	TS-14	486	498	1553	488	0	9.3	
15	TS-15	452	405	-	245	0	39.9	
16	TS-16	460	470	1491	460	0	19.1	
17	TS-17	447	316	-	447	0	132	
18	TS-18	421	420	1558	421	0	1	
19	TS-19	432	440	-	432	0	3.7	
20	TS-20	446	451	1557	447	0	5.2	
21	TS-21	474	476	-	362	0	2.1	
22	TS-22	422	336	-	422	0	26.4	
23	TS-23	430	434	-	430	0	5	
24	TS-24	430	438	-	429	0	11.6	
25	TS-25	450	414	-	451	0	35.8	
26	TS-26	443	434	-	422	0	9.5	
27	TS-27	423	357	1549	344	0	42	
28	TS-28	431	316	-	346	0	48	
29	TS-29	434	351	-	434	0	18	
30	TS-30	452	464	-	452	0	12.6	
31	TS-31	444	449	-	444	0	4.9	
32	TS-32	423	376	1378	248	0	27.4	
33	TS-33	448	437	-	448	0	8.4	
34	TS-34	447	456	-	447	0	9.1	
35	TS-35	511	428	-	511	0	34.3	
36	TS-36	398	409	1502	351	0	10.9	

For Corpro

Signature-   
Name- Ahmed Jassid  
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Name- Mohamed Hekson  
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Signature-   
Name-   
Date- 



# PLANT PIPING CATHODIC PROTECTION SYSTEM PRE-COMMISSIONING DEPOLARIZED POTENTIALS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC


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S.No.	Test Station ID	Pipe Depolarized Potential (-mV) with portable RE	Pipe Depolarized Potential (-mV) with permanent RE	Magnesium Open Circuit Potential (-mV)	Coupon (-mV)	AC Potentail (V)	Portable RE to Permanent RE (mV)	Remarks
37	TS-37	439	439	-	438	0	0.4	
38	TS-38	440	437	1542	440	0	3.1	
39	TS-39	448	443	-	448	0	4	
40	TS-40	451	440	-	240	0	8.8	
41	TS-41	450	401	-	438	0	50.6	
42	TS-42	444	443	1568	444	0	1.9	
43	TS-43	378	330	1513	340	0	43.9	
44	TS-44	441	452	-	441	0	11	
45	TS-45	443	445	-	443	0	3.9	
46	TS-46	453	450	-	343	0	0.8	
47	TS-47	430	442	-	381	0	11.3	
48	TS-48	428	378	1508	324	0	30.2	
49	TS-49	448	446	-	448	0	3	
50	TS-50	433	436	-	432	0	3.9	
51	TS-51	434	390	-	434	0	23.1	
52	TS-52	426	423	-	426	0	1.9	
53	TS-53	454	466	-	454	0	11.2	
54	TS-54	557	555	1566	557	0	1	
55	TS-55	502	293	-	250	0	34.7	
56	TS-56	518	432	-	348	0	76	
57	TS-57	517	482	-	394	0	24.6	
58	TS-58	628	514	1534	628	0	55.5	
59	TS-59	422	381	-	300	0	35.1	
60	TS-60	613	607	-	613	0	5.7	
61	TS-61	510	528	-	510	0	18	
62	TS-62	442	418	-	442	0	23.6	
63	TS-63	522	541	-	522	0	18.3	
64	TS-64	396	421	-	297	0	25.8	
65	TS-65	384	401	1552	384	0	23	
66	TS-66	387	186	-	387	0	200	

For Corrpro

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# PLANT PIPING CATHODIC PROTECTION SYSTEM PRE-COMMISSIONING JUNCTION BOXES AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC


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S.No.	Junction Box ID	Visual inspection of all installed equipment for any physical flaws/damage	Ensure all variable resistors within the junction box are set to minimum	Continuity of main header cable to receipt box	Check cables terminated correctly and internal components continuous	Remarks
1	AG030-AJB-001	Pass	Pass	0.1 ohms	Yes	
2	AG030-AJB-002	Pass	Pass	0.1 ohms	Yes	
3	AG030-AJB-003	Pass	Pass	0.1 ohms	Yes	
4	AG030-AJB-004	Pass	Pass	0.1 ohms	Yes	
5	AG030-AJB-005	Pass	Pass	0.1 ohms	Yes	
6	AG030-AJB-006	Pass	Pass	0.1 ohms	Yes	
7	AG030-NJB-001	Pass	Pass	0.1 ohms	Yes	
8	AG030-NJB-002	Pass	Pass	0.1 ohms	Yes	
9	AG030-NJB-003	Pass	Pass	0.1 ohms	Yes	
10	AG030-NJB-004	Pass	Pass	0.1 ohms	Yes	
11	AG030-NJB-005	Pass	Pass	0.1 ohms	Yes	
12	AG030-NJB-006	Pass	Pass	0.1 ohms	Yes	
13	AG030-SJB-001	Pass	Pass	Not Verified	Yes	
14	AG030-SJB-002	Pass	Pass	Not Verified	Yes	
15	AG030-SJB-003	Pass	Pass	Not Verified	Yes	
16	AG030-SJB-004	Pass	Pass	Not Verified	Yes	
17	AG030-SJB-005	Pass	Pass	Not Verified	Yes	
18	AG030-SJB-006	Pass	Pass	Not Verified	Yes	
19	AG030-SJB-007	Pass	Pass	Not Verified	Yes	
20	AG030-SJB-008	Pass	Pass	Not Verified	Yes	
21	AG030-SJB-009	Pass	Pass	Not Verified	Yes	
22	AG030-SJB-010	Pass	Pass	Not Verified	Yes	
23	AG030-SJB-011	Pass	Pass	Not Verified	Yes	
24	AG030-SJB-012	Pass	Pass	Not Verified	Yes	
25	AG030-SJB-013	Pass	Pass	Not Verified	Yes	
26	AG030-SJB-014	Pass	Pass	Not Verified	Yes	
27	AG030-SJB-015	Pass	Pass	Not Verified	Yes	
28	AG030-SJB-016	Pass	Pass	Not Verified	Yes	
29	AG030-SJB-017	Pass	Pass	Not Verified	Yes	
30	AG030-SJB-018	Pass	Pass	Not Verified	Yes	
31	AG030-SJB-019	Pass	Pass	Not Verified	Yes	
32	AG030-SJB-020	Pass	Pass	Not Verified	Yes	
33	AG030-SJB-021	Pass	Pass	Not Verified	Yes	
34	AG030-SJB-022	Pass	Pass	Not Verified	Yes	
35	AG030-SJB-023	Pass	Pass	Not Verified	Yes	
36	AG030-SJB-024	Pass	Pass	Not Verified	Yes	

For Corrpro

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Name- Amr Jassid  
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Name- Mohamed Hassen  
Date- 23/11/2021

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Name- Mohamed Z. Ibrahim  
Date-



# PLANT PIPING CATHODIC PROTECTION SYSTEM PRE-COMMISSIONING TRANSFORMER RECTIFIER AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC



S.No.	Description	TR Unit	TR Unit	TR Unit	TR Unit	TR Unit	TR Unit	Remarks
<b>PRIOR TO START-UP</b>								
1	Transformer Rectifier ID	AG030-TR-001	AG030-TR-002	AG030-TR-003	AG030-TR-004	AG030-TR-005	AG030-TR-006	
2	Serial Number	H0375A1-4	H0375A1-11	H0375A1-12	H0375A1-13	H0375A1-14	H0375A1-15	
3	Correct Label Plate	Yes	Yes	Yes	Yes	Yes	Yes	
4	Correct Cable Terminations	Yes	Yes	Yes	Yes	Yes	Yes	
5	Correct Cable Tagging	Yes	Yes	Yes	Yes	Yes	Yes	
6	Correct AC Supply	Yes	Yes	Yes	Yes	Yes	Yes	
7	Sunshade	Yes	Yes	Yes	Yes	Yes	Yes	
8	Silica Gel	Yes	Yes	Yes	Yes	Yes	Yes	
9	Dial Type Thermometer	Yes	Yes	Yes	Yes	Yes	Yes	
10	Oil Level Check	Yes	Yes	Yes	Yes	Yes	Yes	
11	Earthing	Yes	Yes	Yes	Yes	Yes	Yes	
12	O&M Manual	Yes	Yes	Yes	Yes	Yes	Yes	
13	Isolator Switch Mismatch	No	No	No	No	No	No	
14	All Electrical Fuses Check	Yes	Yes	Yes	Yes	Yes	Yes	

<b>START-UP / ENERGISE</b>								
1	Energise - Correct AC Supply	Yes	Yes	Yes	Yes	Yes	Yes	
2	Energise - Signs of Distress - Small Output	No	No	No	No	No	No	
3	Energise - Signs of Distress - 10% Output	No	No	No	No	No	No	
4	Energise - Signs of Distress - 100% Output	No	No	No	No	No	No	
5	Accuracy of Panel Meter = Analogue Meter	Yes	Yes	Yes	Yes	Yes	Yes	
6	Accuracy of Panel Meter = Multimeter	Yes	Yes	Yes	Yes	Yes	Yes	

For Corrpro

Signature-   
Name- Ahmed Jawaid  
Date- 23/11/2021

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Name- Mohamed Heksen  
Date- 23/11/2021

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Name- Mohamed Z. Ibrahim  
Date-



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING POTENTIALS AFTER ENERGISATION AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC



S.No.	Test Station ID	Piping Polarized Potential with Permanent RE (-mV)			Piping Polarized Potential with Portable RE (-mV)			Coupon (-mV)						Remarks
		After 24 hours	After 48 hours	After 72 hours	After 24 hours	After 48 hours	After 72 hours	ON			OFF			
								After 24 hours	After 48 hours	After 72 hours	After 24 hours	After 48 hours	After 72 hours	
1	TS-1	2308	2308	2295	2306	2300	2282	2307	2307	2294	1003	1030	1089	
2	TS-2	2263	2257	2242	2251	2246	2223	2261	2257	2241	1333	1523	1530	
3	TS-3	453	462	473	454	455	462	452	462	472	396	408	418	
4	TS-4	401	417	400	429	429	414	400	416	400	516	538	537	
5	TS-5	479	474	509	481	483	480	478	471	509	548	522	574	
6	TS-6	2247	2263	2235	2247	2239	2210	2245	2261	2234	1126	1219	1268	
7	TS-7	2247	2234	2227	2146	2139	2114	2244	2234	2226	1092	1070	1039	
8	TS-8	386	396	387	368	369	369	386	396	387	668	673	665	
9	TS-9	2239	2221	2208	2192	2181	2169	2235	2219	2207	1203	1217	1249	
10	TS-10	1842	1414	1234	1788	1360	1194	1842	1412	1231	905	908	809	
11	TS-11	2330	2363	2310	2341	2341	2317	2326	2321	2311	1072	-	1059	
12	TS-12	2335	2330	2315	2355	2350	2334	2334	2330	2311	1122	1129	1168	
13	TS-13	1735	1474	1341	1493	1247	1131	1732	1473	1341	883	863	848	
14	TS-14	2280	2191	2122	2265	2052	1990	2280	2189	2121	1150	1257	1299	Reed Switch removed
15	TS-15	2265	2210	2135	2205	2132	2062	2263	2210	2132	1151	1290	1273	
16	TS-16	2548	2520	2495	2563	2543	2513	2547	2520	2492	1207	1194	1161	
17	TS-17	2432	2406	2382	2483	2258	2238	2431	2405	2381	1179	1158	1176	
18	TS-18	2405	2377	2358	2409	2377	2363	2402	2374	2356	1066	1082	1079	
19	TS-19	2695	2611	2575	2712	2624	2584	691	2610	2574	-	1152	1285	
20	TS-20	2425	2385	2354	2406	2354	2326	2424	2380	2350	1077	1057	1055	
21	TS-21	2453	2440	2417	2467	2444	2420	2452	2438	2417	1107	1077	1066	
22	TS-22	2430	2418	2403	2072	2046	2032	2428	2417	2402	1177	1240	1263	
23	TS-23	2501	2478	2467	2473	2452	2431	2499	2477	2463	1000	1015	1061	
24	TS-24	2666	2656	2630	2578	2546	2524	2665	2652	2629	1192	1193	1195	
25	TS-25	2446	2433	2401	2442	2415	2395	2445	2432	2400	1204	1131	1228	
26	TS-26	2477	2457	2448	2479	2458	2434	2470	2454	2445	1027	1070	1080	
27	TS-27	2402	2384	2367	2238	2214	2187	2402	2384	2366	1429	1526	1564	Reed Switch removed
28	TS-28	2413	2384	2373	1989	1964	1940	2412	2382	2373	1293	1268	1353	
29	TS-29	2416	2373	2355	2033	1931	1913	2413	2366	2352	1088	1078	1077	
30	TS-30	2425	2420	2408	2425	2424	2402	2419	2419	2405	1334	1195	1027	
31	TS-31	2499	2495	2467	2498	2489	2468	2497	2492	2466	1036	1035	931	
32	TS-32	2394	2355	2353	2250	2231	2219	2388	2355	2350	1014	966	932	
33	TS-33	2295	2294	2286	2268	2266	2257	2292	2293	2284	1620	1488	1372	
34	TS-34	2371	2381	2360	2382	2395	2375	2371	2379	2361	1035	1054	1075	
35	TS-35	2171	2154	2129	1786	1778	1755	2169	2153	2129	1012	967	960	
36	TS-36	665	680	683	896	906	900	660	680	682	225	231	246	
37	TS-37	2457	2463	2440	2441	2440	2423	2453	2462	2434	1215	1791	1771	
38	TS-38	2414	2411	2401	2419	2414	2398	2413	2411	2399	876	795	818	
39	TS-39	2388	2391	2374	2378	2377	2368	2383	2388	2372	1011	1043	993	
40	TS-40	2489	2481	2462	2444	2451	2436	957	2480	2460	-	915	891	Reed Switch removed

Note: Blank OFF readings for coupon are due to reed switch not functioning.

<b>For Corrpro</b> Signature- Name- Ahmed Jawaid Date- 23/11/2021	<b>For ENPPI</b> Signature- Name- Mohamed Hekson Date- 23/11/2021	<b>For PPC</b> Signature- Name- Mohamed Z. Ibrahim Date-
----------------------------------------------------------------------------	----------------------------------------------------------------------------	-------------------------------------------------------------------



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING POTENTIALS AFTER ENERGISATION AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC

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S.No.	Test Station ID	Piping Polarized Potential with Permanent RE (-mV)			Piping Polarized Potential with Portable RE (-mV)			Coupon (-mV)						Remarks
		After 24 hours	After 48 hours	After 72 hours	After 24 hours	After 48 hours	After 72 hours	ON			OFF			
								After 24 hours	After 48 hours	After 72 hours	After 24 hours	After 48 hours	After 72 hours	
41	TS-41	2431	2425	2422	2250	2357	2323	2429	2425	2421	915	921	899	
42	TS-42	2432	2415	2364	2445	2446	2424	2429	2413	2363	791	787	741	TP cap broken
43	TS-43	486	481	495	469	469	469	486	481	495	434	432	448	
44	TS-44	2433	2431	2410	2442	2438	2415	325	2431	2400	-	620	506	
45	TS-45	2452	2463	2449	2474	2477	2452	2452	2463	2449	735	766	764	
46	TS-46	2535	2536	2505	2552	2557	2532	2533	2533	2503	1026	985	919	
47	TS-47	2431	2430	2408	2349	2430	2411	2431	2430	2407	1101	1144	1190	
48	TS-48	2388	2374	2362	2254	2243	2215	620	2372	2362	-	769	908	Reed Switch removed
49	TS-49	2344	2341	2315	2349	2347	2317	2344	2341	2314	767	786	798	
50	TS-50	2254	2242	2222	2255	2339	2214	2252	2242	2214	830	855	861	
51	TS-51	2306	2316	2296	2163	2157	2134	2305	2313	2295	1314	1331	1336	
52	TS-52	2254	2252	2232	2219	2216	2189	2253	2252	2231	914	966	843	
53	TS-53	2090	2096	2064	2056	2052	2035	2090	2095	2063	1102	1093	1055	
54	TS-54	2162	2096	2050	2134	2063	2013	2162	2095	2050	1303	1393	1444	
55	TS-55	2392	2352	2316	1683	1682	1636	2391	2354	2313	1135	1320	1243	
56	TS-56	2519	2480	2444	2366	2310	2272	445	2479	2444	-	532	567	
57	TS-57	2516	2491	2455	2425	2387	2345	2516	2491	2455	779	858	840	
58	TS-58	1697	1664	1647	1676	1651	1625	1696	1664	1641	744	543	426	
59	TS-59	2232	2204	2187	2290	2261	2240	2232	2204	2183	1004	1049	1081	Reed Switch removed
60	TS-60	2092	2052	2028	1637	1622	1608	2091	2051	2028	1466	960	928	Reed Switch removed
61	TS-61	2171	2166	2133	2024	2021	1980	2168	2166	2132	1138	1121	1129	
62	TS-62	2347	2303	2352	2321	2311	2319	2347	2332	-	1071	1120	724	
63	TS-63	2166	2158	2149	2238	2208	2202	2167	2157	2146	1688	1630	880	
64	TS-64	2476	2444	2425	2447	2416	2399	2468	2443	2423	813	705	658	
65	TS-65	831	815	820	877	1041	878	-	815	820	580	451	672	Reed Switch removed
66	TS-66	825	817	815	618	610	610	825	817	815	663	719	695	

**Note:** Blank OFF readings for coupon are due to reed switch not functioning.

For Corrpro

Signature-   
Name- Amr Jassid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Hishon  
Date- 23/11/2021

For PPC

Signature-   
Name- Mohamed Ibrahim  
Date-



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING ON/OFF POTENTIALS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC



S.No.	Test Station ID	Piping Polarized Potential with Permanent RE (-mV)		Piping Polarized Potential with Portable RE (-mV)		Acceptable Criteria (Between -950mV and 1200mV)	Coupon (-mV)		AC Potential (V)	Remarks
		ON	OFF	ON	OFF		ON	OFF		
1	TS-1	1636	1070	1701	1081	Yes	1698	939	0.105	
2	TS-2	1640	1080	1624	1073	Yes	1610	730	0.148	
3	TS-3	872	613	841	610	No	841	580	0.09	
4	TS-4	831	605	781	530	No	779	524	0.082	
5	TS-5	888	655	816	600	No	811	655	0.072	
6	TS-6	1603	1066	1627	1070	Yes	1622	1079	0.121	
7	TS-7	1546	1056	1665	1099	Yes	1659	936	0.132	
8	TS-8	802	543	827	559	No	824	725	0.072	
9	TS-9	1583	1051	1604	1053	Yes	1601	932	0.152	
10	TS-10	1064	626	1065	667	No	1058	705	0.168	
11	TS-11	1748	1124	1738	1121	Yes	1732	938	0.181	
12	TS-12	1750	1144	1706	1113	Yes	1703	943	0.155	
13	TS-13	1004	695	1158	794	No	1149	698	0.174	
14	TS-14	1182	816	1216	799	No	1215	969	0.191	
15	TS-15	1106	626	1137	672	No	1130	838	0.199	
16	TS-16	1762	1217	1710	1216	No	1710	1169	0.143	
17	TS-17	1555	1063	1715	1194	Yes	1701	1052	0.137	
18	TS-18	1593	1196	1598	1193	Yes	1585	990	0.118	
19	TS-19	1689	1283	1690	1273	No	1687	937	0.124	
20	TS-20	1709	1220	1687	1201	No	1686	1065	0.125	
21	TS-21	1757	1201	1718	1184	Yes	1716	770	0.135	
22	TS-22	1433	880	1726	1099	Yes	1725	1043	0.161	
23	TS-23	1699	1167	1692	1177	Yes	1686	858	0.122	
24	TS-24	1735	1260	1768	1278	No	1760	1062	0.181	
25	TS-25	1688	1158	1682	1172	Yes	1680	1180	0.144	
26	TS-26	1707	1179	1690	1160	Yes	1689	821	0.13	
27	TS-27	1577	1024	1671	1105	Yes	1663	889	0.135	
28	TS-28	1382	858	1705	1104	Yes	1703	705	0.148	
29	TS-29	1409	899	1725	1086	Yes	1720	961	0.127	
30	TS-30	1755	1130	1752	1114	Yes	1752	939	0.144	
31	TS-31	1822	1115	1808	1115	Yes	1802	631	0.173	
32	TS-32	1602	1005	1693	1078	Yes	1688	618	0.132	
33	TS-33	1633	1058	1648	1089	Yes	1639	922	0.16	
34	TS-34	1744	1102	1746	1095	Yes	1742	1036	0.135	
35	TS-35	1274	898	1529	1065	Yes	1527	762	0.105	
36	TS-36	1229	724	1053	721	No	1053	336	0.13	
37	TS-37	1783	1114	1794	1095	Yes	1793	1154	0.156	
38	TS-38	1771	1103	1763	1115	Yes	1748	730	0.144	
39	TS-39	1751	1103	1744	1109	Yes	1744	942	0.157	
40	TS-40	1780	1116	1797	1117	Yes	1788	762	0.105	

For Corpro

Signature-   
Name- Ammer Jawaid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Mohamed Hahson  
Date- 23/11/2021

For PPC

Signature-   
Name- Mohamed Z. Ibrahim  
Date- 23/11/2021



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING ON/OFF POTENTIALS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC

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S.No.	Test Station ID	Piping Polarized Potential with Permanent RE (-mV)		Piping Polarized Potential with Portable RE (-mV)		Acceptable Criteria (Between -950mV and 1200mV)	Coupon (-mV)		AC Potential (V)	Remarks
		ON	OFF	ON	OFF		ON	OFF		
41	TS-41	1696	1045	1747	1105	Yes	1741	815	0.12	
42	TS-42	1721	1077	1717	1070	Yes	1710	806	0.131	
43	TS-43	894	627	953	708	No	962	706	0.129	
44	TS-44	1735	1087	1710	1088	Yes	1709	890	0.159	
45	TS-45	1746	1103	1749	1107	Yes	1743	996	0.169	
46	TS-46	1788	1096	1788	1101	Yes	1770	748	0.217	
47	TS-47	1727	1099	1730	1079	Yes	1729	915	0.182	
48	TS-48	1569	1000	1673	1060	Yes	1671	990	0.089	
49	TS-49	1688	1101	1710	1091	Yes	1699	874	0.088	
50	TS-50	1636	1072	1635	1068	Yes	1632	867	0.148	
51	TS-51	1595	1009	1691	1085	Yes	1690	987	0.146	
52	TS-52	1582	1049	1623	1035	Yes	1614	737	0.135	
53	TS-53	1532	1084	1560	1087	Yes	1559	909	0.077	
54	TS-54	1124	900	1126	896	No	1124	1030	0.105	
55	TS-55	811	547	1201	851	No	1200	771	0.142	
56	TS-56	1220	796	1353	899	No	1349	800	0.186	
57	TS-57	1296	844	1360	899	No	1353	744	0.176	
58	TS-58	980	830	1006	894	No	1002	542	0.042	
59	TS-59	1543	1071	1579	1081	Yes	1568	988	0.103	
60	TS-60	1126	1043	1164	1017	Yes	1163	923	0.069	
61	TS-61	1452	1036	1527	1050	Yes	1521	1167	0.113	
62	TS-62	1640	1002	1729	1116	Yes	1721	614	0.167	
63	TS-63	1601	1085	1532	1067	Yes	1529	1112	0.11	
64	TS-64	1698	1136	1693	1120	Yes	1689	450	0.149	
65	TS-65	1786	1383	1914	1411	No	1914	1320	0.22	
66	TS-66	1740	1169	1963	1449	No	1954	1323	0.227	

For Corrpro

Signature-   
Name- Amr Jassid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Hishon  
Date- 23/11/2021

For PPC

Signature-   
Name-   
Date-   





# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING FINAL ON/OFF POTENTIALS AFTER ADJUSTMENTS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC

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an AEGION company

S.No.	Test Station ID	Piping Polarized Potential with Portable RE (-mV)		Acceptable Criteria (Between -950mV and -1200mV)	Remarks
		ON	OFF		
1	TS-1	3590	962	Yes	
2	TS-2	3332	961	Yes	
3	TS-3	2580	870	No	
4	TS-4	2537	796	No	
5	TS-5	2326	895	No	
6	TS-6	3370	956	Yes	
7	TS-7	3443	1038	Yes	
8	TS-8	2680	839	No	
9	TS-9	3303	962	Yes	
10	TS-10	2640	922	No	
11	TS-11	3513	1023	Yes	
12	TS-12	3383	1002	Yes	
13	TS-13	2373	1048	Yes	
14	TS-14	2560	1093	Yes	
15	TS-15	2866	974	Yes	
16	TS-16	3417	1010	Yes	
17	TS-17	3266	1013	Yes	
18	TS-18	3265	1060	Yes	
19	TS-19	3767	1161	Yes	
20	TS-20	3355	1028	Yes	
21	TS-21	3445	1019	Yes	
22	TS-22	3310	969	Yes	
23	TS-23	3560	976	Yes	
24	TS-24	3772	1048	Yes	
25	TS-25	3510	996	Yes	
26	TS-26	3501	969	Yes	
27	TS-27	3475	973	Yes	
28	TS-28	3350	980	Yes	
29	TS-29	3479	972	Yes	
30	TS-30	3366	990	Yes	
31	TS-31	3359	998	Yes	
32	TS-32	3338	959	Yes	
33	TS-33	3062	978	Yes	
34	TS-34	3328	980	Yes	
35	TS-35	2552	1034	Yes	
36	TS-36	2687	950	Yes	
37	TS-37	3362	987	Yes	
38	TS-38	3469	988	Yes	
39	TS-39	3396	999	Yes	
40	TS-40	3493	1008	Yes	

For Corrpro

Signature-   
Name- Amr Jawsad  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Hosen  
Date- 23/11/2021

For PPC

Signature-   
Name- Mohamed Z. Ibrahim  
Date-




# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING FINAL ON/OFF POTENTIALS AFTER ADJUSTMENTS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC


**corrpro**  
an AEGION company

S.No.	Test Station ID	Piping Polarized Potential with Portable RE (-mV)		Acceptable Criteria (Between -950mV and -1200mV)	Remarks
		ON	OFF		
41	TS-41	3338	991	Yes	
42	TS-42	3141	966	Yes	
43	TS-43	2666	900	No	
44	TS-44	3301	969	Yes	
45	TS-45	3302	983	Yes	
46	TS-46	3269	999	Yes	
47	TS-47	3331	963	Yes	
48	TS-48	3239	950	Yes	
49	TS-49	3296	990	Yes	
50	TS-50	3392	974	Yes	
51	TS-51	3570	972	Yes	
52	TS-52	3263	956	Yes	
53	TS-53	2990	1001	Yes	
54	TS-54	2116	1089	Yes	
55	TS-55	2696	965	Yes	
56	TS-56	2708	971	Yes	
57	TS-57	2734	984	Yes	
58	TS-58	2088	1121	Yes	
59	TS-59	3235	960	Yes	
60	TS-60	2568	1132	Yes	
61	TS-61	2563	1040	Yes	
62	TS-62	3411	970	Yes	
63	TS-63	2541	1052	Yes	
64	TS-64	3613	952	Yes	
65	TS-65	3313	1008	Yes	
66	TS-66	3526	999	Yes	

For Corrpro

Signature-   
Name- Amr Jassid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Hishon  
Date- 23/11/2021

For PPC

Signature-   
Name- Mohamed Ibrahim  
Date-



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING INSULATING FLANGE JOINTS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC



S.No.	Assigned Insulating Flange Joint ID	Protected Side Potential with Portable RE (-mV)		Unprotected Side Potential with Portable RE (-mV)		Acceptable Criteria: Pass/Fail*	Electrical Continuity across the flange	Acceptable Criteria: Over Limit	Remarks
		ON	OFF	ON	OFF				
Pumps Area									
1	1	2401	960	293	309	Pass	OL	Yes	
2	2	1315	360	850	930	Pass*	OL	Yes	
3	3	2602	940	390	387	Pass	OL	Yes	
4	4	2654	890	416	422	Pass	OL	Yes	
5	5	2699	892	461	435	Pass	OL	Yes	
6	6	2650	931	467	470	Pass	OL	Yes	
7	7	2080	652	180	202	Pass	OL	Yes	
8	8	2376	802	142	136	Pass	OL	Yes	
9	9	2350	803	147	188	Pass	OL	Yes	
10	10	2170	852	413	430	Pass	OL	Yes	
11	11	-	-	-	-	Pass	OL	Yes	No Soil Access
12	12	990	490	165	170	Pass	OL	Yes	
13	13	-	-	-	-	Pass	OL	Yes	No Soil Access
14	14	2620	890	405	420	Pass	OL	Yes	
15	15	2703	961	501	496	Pass	X	-	
16	16	2553	820	335	410	Pass	OL	Yes	
17	17	2557	806	380	385	Pass	OL	Yes	
18	18	1466	300	186	44	Pass*	OL	Yes	
19	19	2630	775	430	352	Pass*	OL	Yes	
20	20	1580	385	128	140	Pass	OL	Yes	
21	21	2689	870	461	447	Pass	OL	Yes	
22	22	-	-	-	-	Pass	OL	Yes	No Soil Access
23	23	-	-	-	-	Pass	OL	Yes	No Soil Access
24	24	2560	874	460	450	Pass	OL	Yes	
25	25	-	-	-	-	Pass	OL	Yes	No Soil Access
26	26	2715	960	549	535	Pass	OL	Yes	
27	27	2360	705	350	330	Pass	OL	Yes	
28	28	2625	835	430	427	Pass	OL	Yes	
29	29	2444	800	409	395	Pass	OL	Yes	
30	30	-	-	-	-	Pass	OL	Yes	No Soil Access
31	31	2550	855	470	450	Pass	OL	Yes	
32	32	2046	850	-	-	Pass	OL	Yes	No Soil Access
33	33	-	-	-	-	Pass	OL	Yes	No Soil Access
34	34	2574	870	450	435	Pass	OL	Yes	
35	35	2695	860	510	398	Pass	OL	Yes	
36	36	2596	800	474	374	Pass	X	-	
37	37	2580	820	450	400	Pass	OL	Yes	
38	38	-	-	-	-	Pass	OL	Yes	No Soil Access
39	39	-	-	-	-	Pass	OL	Yes	No Soil Access
40	40	-	-	-	-	Pass	OL	Yes	No Soil Access
41	41	-	-	-	-	Pass	OL	Yes	No Soil Access
42	42	2635	860	485	454	Pass	OL	Yes	
43	43	-	-	-	-	Pass	OL	Yes	No Soil Access
44	44	2561	790	378	368	Pass	OL	Yes	
45	45	2450	795	450	380	Pass*	OL	Yes	
46	46	-	-	-	-	Pass	OL	Yes	No Soil Access
47	47	-	-	-	-	Pass	OL	Yes	No Soil Access
48	48	-	-	-	-	Pass	OL	Yes	No Soil Access

## Pass/Fail Criterion:

ON potentials on both sides of the piping (underground or protected side and aboveground or unprotected side) are different by more than 100mV DC and the potential shift between ON and OFF potentials on the aboveground side is less than 25mV; the isolator is considered effective.

## Note:

Poor soil access at insulating flange joint locations

\* Swing on unprotected side needs to be further investigated.

X = Disconnected Flange

For Corrpro

Signature-   
Name- Amr Jassid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Hishon  
Date- 23/11/2021

For PPC

Signature-  
Name-  
Date-



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING INSULATING FLANGE JOINTS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC



S.No.	Assigned Insulating Flange Joint ID	Protected Side Potential with Portable RE (-mV)		Unprotected Side Potential with Portable RE (-mV)		Acceptable Criteria: Pass/Fail*	Electrical Continuity across the flange	Acceptable Criteria: Over Limit	Remarks
		ON	OFF	ON	OFF				
49	49	-	-	-	-	Pass	OL	Yes	No Soil Access
50	50	-	-	-	-	Pass	OL	Yes	No Soil Access
51	51	-	-	-	-	Pass	OL	Yes	No Soil Access
52	52	-	-	-	-	Pass	OL	Yes	No Soil Access
53	53	-	-	-	-	Pass	OL	Yes	No Soil Access
54	54	-	-	-	-	Pass	OL	Yes	No Soil Access
55	55	-	-	-	-	Pass	OL	Yes	No Soil Access
56	56	2480	879	494	401	Pass*	OL	Yes	
57	57	-	-	-	-	Pass	OL	Yes	No Soil Access
58	58	-	-	-	-	Pass	OL	Yes	No Soil Access
59	59	2511	890	410	400	Pass	OL	Yes	
60	60	2479	821	390	365	Pass	OL	Yes	
61	61	-	-	-	-	Pass	OL	Yes	No Soil Access
62	62	-	-	-	-	Pass	OL	Yes	No Soil Access
63	63	-	-	-	-	Pass	OL	Yes	No Soil Access
64	64	-	-	-	-	Pass	OL	Yes	No Soil Access
65	65	-	-	-	-	Pass	OL	Yes	No Soil Access
66	66	-	-	-	-	Pass	OL	Yes	No Soil Access
67	67	-	-	-	-	Pass	OL	Yes	No Soil Access
68	68	-	-	-	-	Pass	OL	Yes	No Soil Access
69	69	-	-	-	-	Pass	X	Yes	No Soil Access
70	70	2150	800	278	275	Pass	X	Yes	
71	71	2239	951	251	255	Pass	OL	Yes	
72	72	2294	882	192	170	Pass	OL	Yes	
73	73	2237	861	172	160	Pass	X	Yes	
74	74	2240	980	450	438	Pass	OL	Yes	
75	75	3316	651	599	605	Pass	OL	Yes	
Behind Tank Area (FW line)									
76	76	-	-	-	-	Pass	OL	Yes	No Soil Access
77	77	-	-	-	-	Pass	OL	Yes	No Soil Access
78	78	2385	970	271	265	Pass	OL	Yes	
79	79	2578	880	265	262	Pass	OL	Yes	
80	80	2650	889	296	280	Pass	OL	Yes	
81	81	-	-	-	-	Pass	OL	Yes	No Soil Access
Foam Lines									
82	82	2133	908	285	281	Pass	OL	Yes	
83	83	970	980	290	283	Pass	OL	Yes	
84	84	2780	924	262	248	Pass	OL	Yes	
85	85	1828	934	315	325	Pass	OL	Yes	

## Pass/Fail Criterion:

ON potentials on both sides of the piping (underground or protected side and aboveground or unprotected side) are different by more than 100mV DC and the potential shift between ON and OFF potentials on the aboveground side is less than 25mV; the isolator is considered effective.

## Note:

Poor soil access at insulating flange joint locations

\* Swing on unprotected side needs to be further investigated.

X = Disconnected Flange

For Corrpro

Signature:   
Name: Amr Jassid  
Date: 23/11/2021

For ENPPI

Signature:   
Name: Mohamed Hosen  
Date: 23/11/2021

For PPC

Signature:   
Name: Mohamed Z. Ibrahim  
Date:



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING INSULATING FLANGE JOINTS AT AGROOD 30

Project: New Crude Oil Tank Farm Project  
Owner: EGPC

[illegible]**Pass/Fail Criterion:**

ON potentials on both sides of the piping (underground or protected side and aboveground or unprotected side) are different by more than 100mV DC and the potential shift between ON and OFF potentials on the aboveground side is less than 25mV; the isolator is considered effective.

**Note:**

Poor soil access at insulating flange joint locations


\* Swing on unprotected side needs to be further investigated.

X = Disconnected Flange

For Corpro

Signature-   
Name- Amner Jawaid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Mohsen  
Date- 23/11/2021

For PPC

Signature-  
Name-  
Date-

Mohamed Ibrahim



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING TRANSFORMER RECTIFIER AND JUNCTION BOX READINGS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC


**corrpro**  
an AEGION company

TRANSFORMER RECTIFIER								
S.No.	Description	TR-001 Readings	TR-002 Readings	TR-003 Readings	TR-004 Readings	TR-005 Readings	TR-006 Readings	Remarks
1	DC Voltage Output (V) - Display	10.0	4.4	3.8	5.4	8.1	7	
2	DC Voltage Output (V) - Measured	10.03	4.397	3.79	5.426	8.11	7.05	
3	DC Current Output at 60A/75mV Shunt (mV) - Display	16.4	2.0	1.5	2.9	8.3	7	
4	DC Current Output at 60A/75mV Shunt (mV) - Measured	16.5	2.1	1.6	3	8.3	7	
5	DC Current Output (A) - Converted from Shunt	13.2	1.68	1.28	2.4	6.64	5.6	
6	Back EMF (V)	1.9	2	1.6	2.3	2.2	1.8	
7	AC Input Voltage (V)	395.9	396.6	395.8	396.1	396.3	395.3	


ANODE JUNCTION BOX								
S.No.	Description	AJB-001 Readings	AJB-002 Readings	AJB-003 Readings	AJB-004 Readings	AJB-005 Readings	AJB-006 Readings	Remarks
1	AJB Current in the Main cable (A) - Measured via Clamp Meter	16.7	2.05	1.48	2.94	8.48	7.14	
2	Shunt reading for Circuit 1 - AJB to ASB (mV) (Shunt = 12A/100mV)	21.6	4.2	3.6	6.3	24.3	18.4	
3	Shunt reading for Circuit 2 - AJB to ASB (mV) (Shunt = 12A/100mV)	29.1	4.1	2.3	6.1	11.1	13.1	
4	Shunt reading for Circuit 3 - AJB to ASB (mV) (Shunt = 12A/100mV)	41.3	4.5	2.9	5.9	17.1	16.4	
5	Shunt reading for Circuit 4 - AJB to ASB (mV) (Shunt = 12A/100mV)	56.8	4	3.5	7	13	11.7	
6	Shunt reading for Circuit 5 - AJB to ASB (mV) (Shunt = 12A/100mV)	-	-	-	-	-	-	
7	Total shunt reading (mV)	148.8	16.8	12.3	25.3	65.5	59.6	
8	Shunt reading converted to Amperes (A)	17.856	2.016	1.476	3.036	7.86	7.152	

NEGATIVE JUNCTION BOX								
S.No.	Description	NJB-001 Readings	NJB-002 Readings	NJB-003 Readings	NJB-004 Readings	NJB-005 Readings	NJB-006 Readings	Remarks
1	NJB Current in the Main cable (A) - Measured via Clamp Meter	17.18	2.1	1.55	3.1	8.62	7.3	
2	Shunt reading for Circuit 1 (mV) (Shunt = 15A/100mV)	6.4	2.5	0.6	6.5	25.6	1 is bonded with 3	
3	Shunt reading for Circuit 2 (mV) (Shunt = 15A/100mV)	2 is bonded with 1	2 is bonded with 3	2 is bonded with 1	5.9	14.1	20.3	
4	Shunt reading for Circuit 3 (mV) (Shunt = 15A/100mV)	105	5.7	4.9	3 is bonded with 1	20.7	14.6	
5	Shunt reading for Circuit 4 (mV) (Shunt = 15A/100mV)	4 is bonded with 3	5.4	4.7	8	25.7	13.7	
6	Total shunt reading (mV)	111.4	13.6	10.2	20.4	86.1	48.6	
7	Shunt reading converted to Amperes (A)	16.71	2.04	1.53	3.06	12.915	7.29	

For Corrpro

Signature-   
Name- Ahmed Jawaid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Hdrson  
Date- 23/11/2021

For PPC

Signature-   
Name- Mohamed Z. Ibrahim  
Date- 



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING ANODE SPLITTER JUNCTION BOXES READINGS AT AGROOD 30


Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC




ANODE SPLITTER BOX														
S.No.	Description	SJB-001		SJB-002		SJB-003		SJB-004		SJB-005		SJB-006		Remarks
		Anode	Result	Anode	Result	Anode	Result	Anode	Result	Anode	Result	Anode	Result	
1	ASB Current in the Main cable (A) - Measured via Clamp Meter	-	2.5	-	3.47	-	3.8	-	6.88	-	0.38	-	0.48	
2	Shunt	5A/100mV												
3	Shunt reading for Circuit 1 - ASB to Anode (mV)	A1	3.6	A11	7.8	A21	6.5	A31	8.7	A41	0.5	A51	2.8	
4	Shunt reading for Circuit 2 - ASB to Anode (mV)	A2	5.8	A12	5.2	A22	6.8	A32	9.6	A42	0.7	A52	3.8	
5	Shunt reading for Circuit 3 - ASB to Anode (mV)	A3	6.4	A13	1.6	A23	5.6	A33	15.8	A43	0.8	A53	0.9	
6	Shunt reading for Circuit 4 - ASB to Anode (mV)	A4	5.2	A14	8.4	A24	9	A34	11.6	A44	0.9	A54	0.5	
7	Shunt reading for Circuit 5 - ASB to Anode (mV)	A5	3.3	A15	1.2	A25	14.6	A35	16.8	A45	0.6	A55	0.8	
8	Shunt reading for Circuit 6 - ASB to Anode (mV)	A6	4.3	A16	25.2	A26	4.3	A36	18.6	A46	1.1	A56	0.4	
9	Shunt reading for Circuit 7 - ASB to Anode (mV)	A7	4.6	A17	3.4	A27	3.8	A37	9.1	A47	0.8	A57	0.0	
10	Shunt reading for Circuit 8 - ASB to Anode (mV)	A8	7.6	A18	0	A28	4.6	A38	16.8	A48	1.6	A58	0	
11	Shunt reading for Circuit 9 - ASB to Anode (mV)	A9	3.6	A19	7.5	A29	7.5	A39	19.8	A49	1.4	A59	0.0	
12	Shunt reading for Circuit 10 - ASB to Anode (mV)	A10	6.1	A20	10	A30	13	A40	8	A50	1.8	A60	0.6	
13	Total shunt reading (mV)	-	50.5	-	70.3	-	75.7	-	134.8	-	10.2	-	9.8	
14	Shunt reading converted to Amperes (A)	-	2.525	-	3.515	-	3.785	-	6.740	-	0.510	-	0.490	

S.No.	Description	SJB-007		SJB-008		SJB-009		SJB-010		SJB-011		SJB-012		Remarks
		Anode	Result	Anode	Result	Anode	Result	Anode	Result	Anode	Result	Anode	Result	
1	ASB Current in the Main cable (A) - Measured via Clamp Meter	-	0.51	-	0.46	-	0.37	-	0.19	-	0.32	-	0.41	
2	Shunt	5A/100mV												
3	Shunt reading for Circuit 1 - ASB to Anode (mV)	A61	0.0	A71	1.1	A81	0.5	A91	0.7	A101	0.1	A111	0.3	
4	Shunt reading for Circuit 2 - ASB to Anode (mV)	A62	1.2	A72	0.6	A82	0.5	A92	0.3	A102	0.9	A112	0.6	
5	Shunt reading for Circuit 3 - ASB to Anode (mV)	A63	3.5	A73	0.9	A83	0.4	A93	0.8	A103	0.7	A113	0.8	
6	Shunt reading for Circuit 4 - ASB to Anode (mV)	A64	1.6	A74	0.7	A84	0.6	A94	0.4	A104	2	A114	1.1	
7	Shunt reading for Circuit 5 - ASB to Anode (mV)	A65	0.0	A75	0.8	A85	1.5	A95	0.2	A105	0.6	A115	0.7	
8	Shunt reading for Circuit 6 - ASB to Anode (mV)	A66	0	A76	1.1	A86	1.7	A96	0.3	A106	0.9	A116	0.6	
9	Shunt reading for Circuit 7 - ASB to Anode (mV)	A67	0.0	A77	1.2	A87	1.6	A97	0.7	A107	1.9	A117	2.6	
10	Shunt reading for Circuit 8 - ASB to Anode (mV)	A68	2.7	A78	1.1	A88	1.3	A98	0.6	A108	0.1	A118	1.2	
11	Shunt reading for Circuit 9 - ASB to Anode (mV)	A69	2.2	A79	1.0	A89	0.2	A99	0.6	A109	0.6	A119	0.6	
12	Shunt reading for Circuit 10 - ASB to Anode (mV)	A70	0	A80	1.2	A90	0.3	A100	0.9	A110	0.1	A120	0	
13	Total shunt reading (mV)	-	11.2	-	9.7	-	8.6	-	5.5	-	7.9	-	8.5	
14	Shunt reading converted to Amperes (A)	-	0.560	-	0.485	-	0.430	-	0.275	-	0.395	-	0.425	

For Corrpro

Signature-   
Name- Ahmed Jawaid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Hekson  
Date- 23/11/2021

For PPC

Signature-   
Name-   
Date- 



# PLANT PIPING CATHODIC PROTECTION SYSTEM COMMISSIONING ANODE SPLITTER JUNCTION BOXES READINGS AT AGROOD 30

Client: ENPPI  
Project: New Crude Oil Tank Farm Project  
Owner: EGPC

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an AEGION company


ANODE SPLITTER BOX														
S.No.	Description	SJB-013		SJB-014		SJB-015		SJB-016		SJB-017		SJB-018		Remarks
		Anode	Result	Anode	Result	Anode	Result	Anode	Result	Anode	Result	Anode	Result	
1	ASB Current in the Main cable (A) - Measured via Clamp Meter	-	0.77	-	0.71	-	0.65	-	0.86	-	1.16	-	1.65	
2	Shunt	5A/100mV												
3	Shunt reading for Circuit 1 - ASB to Anode (mV)	A121	1.0	A131	1.4	A141	4.2	A151	2.2	A161	0.0	A171	2.0	
4	Shunt reading for Circuit 2 - ASB to Anode (mV)	A122	0.4	A132	1.3	A142	2.7	A152	0.4	A162	2.4	A172	1.6	
5	Shunt reading for Circuit 3 - ASB to Anode (mV)	A123	0.6	A133	1.2	A143	1.4	A153	4.0	A163	2.0	A173	2.9	
6	Shunt reading for Circuit 4 - ASB to Anode (mV)	A124	2.5	A134	1.2	A144	1	A154	1	A164	3.2	A174	2.8	
7	Shunt reading for Circuit 5 - ASB to Anode (mV)	A125	3.1	A135	1.9	A145	1.1	A155	2.1	A165	1.3	A175	0.0	
8	Shunt reading for Circuit 6 - ASB to Anode (mV)	A126	1.6	A136	1.6	A146	0.9	A156	1.9	A166	1.2	A176	1.9	
9	Shunt reading for Circuit 7 - ASB to Anode (mV)	A127	0.8	A137	1.9	A147	0.5	A157	1.8	A167	2.2	A177	8.9	
10	Shunt reading for Circuit 8 - ASB to Anode (mV)	A128	1.1	A138	0.8	A148	0.8	A158	0.9	A168	2.5	A178	6.4	
11	Shunt reading for Circuit 9 - ASB to Anode (mV)	A129	1.9	A139	2.1	A149	0.4	A159	1.0	A169	3.1	A179	5.8	
12	Shunt reading for Circuit 10 - ASB to Anode (mV)	A130	1.8	A140	1.1	A150	0.8	A160	1.9	A170	2.8	A180	2	
13	Total shunt reading (mV)	-	14.8	-	14.5	-	13.8	-	17.2	-	20.7	-	34.3	
14	Shunt reading converted to Amperes (A)	-	0.740	-	0.725	-	0.690	-	0.860	-	1.035	-	1.715	

S.No.	Description	SJB-019		SJB-020		SJB-021		SJB-022		SJB-023		SJB-024		Remarks
		Anode	Result	Anode	Result	Anode	Result	Anode	Result	Anode	Result	Anode	Result	
1	ASB Current in the Main cable (A) - Measured via Clamp Meter	-	2.59	-	3.17	-	2.13	-	1.51	-	1.98	-	1.4	
2	Shunt	5A/100mV												
3	Shunt reading for Circuit 1 - ASB to Anode (mV)	A181	8.1	A191	3.9	A201	3.1	A211	8.8	A221	2.6	A231	4.3	
4	Shunt reading for Circuit 2 - ASB to Anode (mV)	A182	3	A192	3.3	A202	1.4	A212	2.3	A222	5.4	A232	2.9	
5	Shunt reading for Circuit 3 - ASB to Anode (mV)	A183	3.1	A193	1.1	A203	7.4	A213	8.9	A223	4.7	A233	0.0	
6	Shunt reading for Circuit 4 - ASB to Anode (mV)	A184	6.8	A194	8.3	A204	5.6	A214	0	A224	3.9	A234	2	
7	Shunt reading for Circuit 5 - ASB to Anode (mV)	A185	3.2	A195	2.6	A205	6.9	A215	1.0	A225	3.5	A235	5.2	
8	Shunt reading for Circuit 6 - ASB to Anode (mV)	A186	12.5	A196	6.8	A206	0.1	A216	4.3	A226	6.2	A236	1.7	
9	Shunt reading for Circuit 7 - ASB to Anode (mV)	A187	3.2	A197	9.8	A207	7.2	A217	2.3	A227	1.1	A237	1.1	
10	Shunt reading for Circuit 8 - ASB to Anode (mV)	A188	4.9	A198	7	A208	4.3	A218	1	A228	2.4	A238	4.5	
11	Shunt reading for Circuit 9 - ASB to Anode (mV)	A189	2.2	A199	8.7	A209	4.1	A219	1.2	A229	3.8	A239	4.1	
12	Shunt reading for Circuit 10 - ASB to Anode (mV)	A190	2.9	A200	10.3	A210	4.1	A220	1.7	A230	6.1	A240	1.3	
13	Total shunt reading (mV)	-	49.9	-	61.8	-	44.2	-	31.5	-	39.7	-	27.1	
14	Shunt reading converted to Amperes (A)	-	2.495	-	3.090	-	2.210	-	1.575	-	1.985	-	1.355	

For Corpro

Signature-   
Name- Amr Jassid  
Date- 23/11/2021

For ENPPI

Signature-   
Name- Mohamed Hishon  
Date- 23/11/2021

For PPC

Signature-   
Name- Mohamed Z. Ibrahim  
Date- 



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.10- Electrical Pre-Commissioning Check Lists



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T01-CPTR

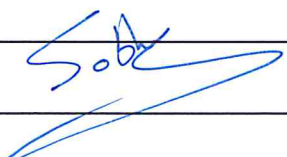
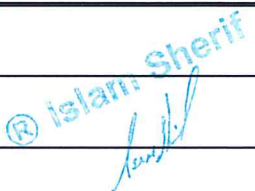
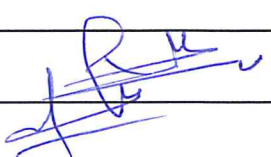
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T01-CPTR

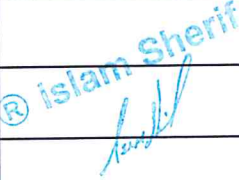

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T02-CPTR

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T02-CPTR

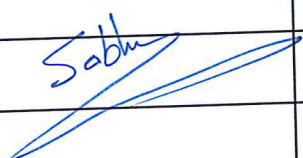

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

#### NOTES:



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T03-CPTR

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T03-CPTR



**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

#### NOTES:

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T04-CPTR



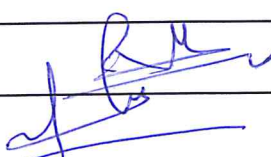
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T04-CPTR

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

#### NOTES:



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T10-CPTR

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-030-T10-CPTR

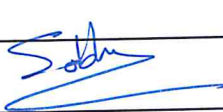
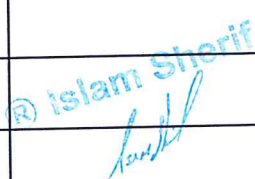

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST


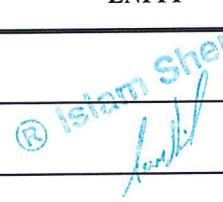
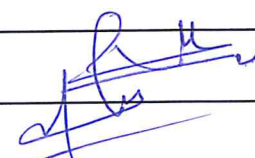
EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

#### NOTES:

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)			
<b>PROJECT NUMBER</b> : 1251-100		<b>DISCIPLINE</b> : Electrical	
<b>SYSTEM NAME</b> : Piping Cathodic Protection System		<b>SYSTEM ID</b> : 030-CP-001	
<b>SUB-SYSTEM NAME</b> : Piping Cathodic Protection System		<b>SUB-SYSTEM ID</b> : 030-CP-001	
<b>ITEM TAG No.</b> : P-AG030-TR-001		<b>AREA</b> : 30	
<b>REF. DWGs/DOCs</b> :			
No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	
<b>REMARKS AND OBSERVATIONS :</b>			
<b>OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.</b>			
<b>COMPANY</b>	<b>CONST. CONTRACTOR</b>	<b>ENPPI</b>	<b>CUSTOMER</b>
<b>NAME</b>			
<b>SIGNATURE</b>			
<b>DATE</b>			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-001

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [II]

NOTES:




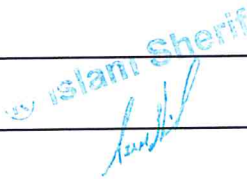
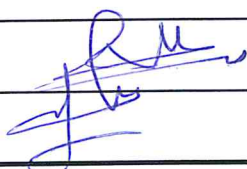
## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Piping Cathodic Protection System	<b>SYSTEM ID</b> : 030-CP-001
<b>SUB-SYSTEM NAME</b> : Piping Cathodic Protection System	<b>SUB-SYSTEM ID</b> : 030-CP-001
<b>ITEM TAG No.</b> : P-AG030-TR-002	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

### REMARKS AND OBSERVATIONS :

OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-002

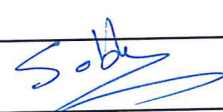

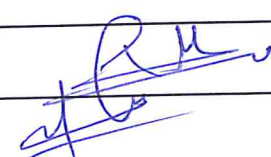
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			





**PRE-COMMISSIONING CHECK LIST**  
**MEDIUM VOLTAGE CABLES**  
**EL-31 A**

**INSULATION TEST**  
**EL-31 A**

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

**TABLE [I]**

**NOTES:**

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-003

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-003

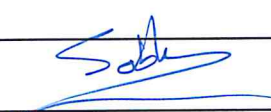

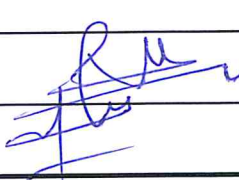
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



**PRE-COMMISSIONING CHECK LIST**  
**MEDIUM VOLTAGE CABLES**  
**EL-31 A**

**INSULATION TEST**  
**EL-31 A**

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

**TABLE [I]**

NOTES:




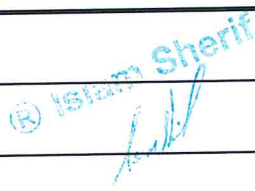

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Electrical
<b>SYSTEM NAME</b> : Piping Cathodic Protection System	<b>SYSTEM ID</b> : 030-CP-001
<b>SUB-SYSTEM NAME</b> : Piping Cathodic Protection System	<b>SUB-SYSTEM ID</b> : 030-CP-001
<b>ITEM TAG No.</b> : P-AG030-TR-004	<b>AREA</b> : 30
<b>REF. DWGs/DOCs</b> :	

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-004



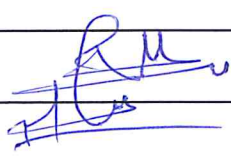
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

NOTES:

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-005

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-005

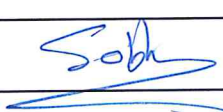
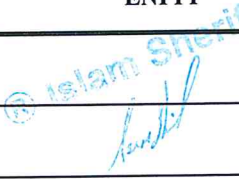

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

### INSULATION TEST

EL-31 A

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

TABLE [I]

#### NOTES:



## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-006

**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	Construction punch list to be checked.	✓	
2	Check cables are correctly fixed to trays and supports.	✓	
3	Check cables through walls or ceilings are correctly sealed.	✓	
4	Check that all cables are installed in accordance with cable lists and approved documents.	✓	
5	Check identification tags of all conductors and wires.	✓	
6	Check connection, termination and joints of cables are correctly executed.	✓	
7	Inspect cables for jacket damage.	✓	
8	Ensure that the correct size and type of crimping lugs have been used.	✓	
9	Check that the bending radius of cables is not less than the minimum established.	✓	
10	Cable markers to be installed before covering buried cables or cables in cable trays.	✓	
11	Tie wraps to be used for cable and wires fixation.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST MEDIUM VOLTAGE CABLES EL-31 A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Electrical

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : P-AG030-TR-006


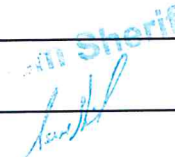
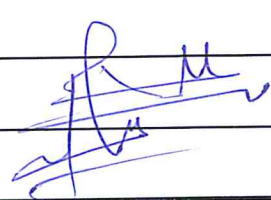
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
12	Trench markers to be checked w.r.t approved documents.	✓	
13	Check cable glands for tightness and check the correct type of gland has been used for the size and type of installed cables.	✓	
14	Inspect cable laid in trenches, segregation and protection.	✓	
15	Cables to be tested (continuity/insulation resistance).(*)	✓	
16	Equipment test report and inspection certificate to be-checked.	✓	
17	Check availability of vendor documents, including commissioning and start-up instructions. (If Any)	N/A	
18	Calibration test certificate of testing equipment to be checked.	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			





**PRE-COMMISSIONING CHECK LIST**  
**MEDIUM VOLTAGE CABLES**  
**EL-31 A**

**INSULATION TEST**  
**EL-31 A**

CABLE VOLTAGE LEVEL	D.C TEST VOLTAGE	MINIMUM INSULATION RESISTANCE (M.OHMS).
3.3kV	2500V	200
6.6kV & Above	5000V	200

**TABLE [I]**

**NOTES:**

## PRE-COMMISSIONING CHECK LIST IMPRESSED CURRENT / SACRIFICIAL ANODES CP-01A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Cathodic Protection

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : Cathodic Protection



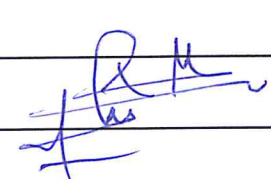
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
1	INSTALLATION AS PER RELEVANT AFC DRAWINGS		
1.1	T/R's, panels and boxes location as per drawings	✓	
1.2	T/R's, panels, boxes and test posts fixation:(concrete foundation dimensions,cables entry in foundation, leveling and tightness)	✓	
2	EXTERNAL CABLES		
2.1	Cables are properly buried	✓	
2.2	Cables are in protective conduits (if required)	✓	
2.3	Cables are marked by cables markers (if required)	✓	
3	T/R (TRANSFORMER RECTIFIER)		
3.1	Oil level in the T/R	✓	
3.2	Filter is fitted with dry silica gel	✓	
3.3	Earthing cable is tightly connected	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST IMPRESSED CURRENT / SACRIFICIAL ANODES CP-01A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Cathodic Protection

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : Cathodic Protection


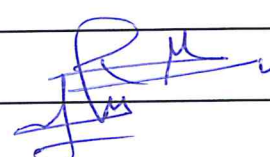
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
3.4	T/R and its sealing is in clean condition and dust free	✓	
3.5	T/R potentiometer is set at minimum setting or adjusted to minimum before energizing	✓	
3.6	INTERNAL CABLES:(Proper termination,Correct polarity,Tagging,Tight fixation and Cable glands and shrouds-if required)	✓	
3.7	Spare fuses and circuit cards are available-if required	✓	
4	<b>JUNCTION BOXES (NEGATIVE AND POSITIVE JUNCTION BOXES)</b>		
4.1	Earthing cables are tightly connected	✓	
4.2	Junction boxes and its sealing are in clean condition and dust free	✓	
4.3	Variable resistances (if any) are set at minimum setting before energizing	✓	
4.4	INTERNAL CABLES:(Proper termination,Correct polarity,Tagging,Tight fixation and Cable glands and shrouds-if required)	✓	
5	<b>ANODES</b>		
5.1	Type (horizontal ground bed, distributed anodes, etc.) as per the AFC drawing	✓	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST IMPRESSED CURRENT / SACRIFICIAL ANODES CP-01A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Cathodic Protection

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : Cathodic Protection



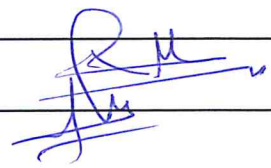
**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
5.2	Anodes locations are as per the AFC drawings	✓	
6	<b>TEST POSTS AND BOND BOXES</b>		
6.1	Co-ordinate with the vendor to carry out checks and tests on junction boxes, test posts, bond boxes, etc. as per vendor approved procedures	N/A	
6.2	Junction boxes and its sealing are in clean condition and dust free	✓	
6.3	Check continuity between test lead cables and metallic structure	✓	
7	<b>PHOTOVOLTAIC POWER CELLS</b>		
7.1	Correct polarity of battery cables	N/A	
7.2	Correct level of battery electrolyte	N/A	
7.3	Spare fuses and circuit cards available	N/A	
7.4	INTERNAL CABLES:(Proper termination,Correct polarity,Tagging,Tight fixation and Cable glands and shrouds-if required)	N/A	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			



## PRE-COMMISSIONING CHECK LIST IMPRESSED CURRENT / SACRIFICIAL ANODES CP-01A

**PROJECT TITLE** : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)

**PROJECT NUMBER** : 1251-100

**DISCIPLINE** : Cathodic Protection

**SYSTEM NAME** : Piping Cathodic Protection System

**SYSTEM ID** : 030-CP-001

**SUB-SYSTEM NAME** : Piping Cathodic Protection System

**SUB-SYSTEM ID** : 030-CP-001

**ITEM TAG No.** : Cathodic Protection




**AREA** : 30

**REF. DWGs/DOCs** :

No.	DESCRIPTION	RESULT	PL
		OK/NA/PL	ITEM No.
8	TEMPORARY CATHODIC PROTECTION (if required)		
8.1	Disconnect all the temporary cathodic protection anodes before energizing	N/A	
9	INSULATING FLANGE KITS, JOINTS AND SPOOLS (if required)		
9.1	All are installed as per P&IDs; in good condition and free of sand and water	N/A	
9.2	Check continuity before and after the two sides	N/A	

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
NAME			
SIGNATURE			
DATE			

## PRE-COMMISSIONING CHECK LIST IMPRESSED CURRENT / SACRIFICIAL ANODES CP-01A

<b>PROJECT TITLE</b> : EGPC Crude Oil Tank Farms Project, Agrood Area 30 (Module-01)	
<b>PROJECT NUMBER</b> : 1251-100	<b>DISCIPLINE</b> : Cathodic Protection
<b>SYSTEM NAME</b> : Piping Cathodic Protection System	<b>SYSTEM ID</b> : 030-CP-001
<b>SUB-SYSTEM NAME</b> : Piping Cathodic Protection System	<b>SUB-SYSTEM ID</b> : 030-CP-001
<b>ITEM TAG No.</b> : Cathodic Protection	<b>AREA</b> : 30

**REF. DWGs/DOCs** :

**NATURAL POTENTIAL SURVEY** :

**REFERENCE TO** :                      **CU/CUSO4** ☐                      **AG/AGCI** ☐                      **ZINC** ☐

ID No.	NAT. POT. (MV)	REMARKS

**REMARKS AND OBSERVATIONS :**

**OK: NO OBJECTION, NA: NOT APPLICABLE, PL: PUNCH LIST.**

COMPANY	CONST. CONTRACTOR	ENPPI	CUSTOMER
<b>NAME</b>			
<b>SIGNATURE</b>			
<b>DATE</b>			

10000-Z-000-EK7-TMP-0001 (03/14)





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 12.11- Electrical Supplier Check Lists & Reports



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 13- Electrical Commissioning





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 13.01- Electrical -Commissioning Check Lists



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 13.02- Electrical Supplier Check Lists & Reports





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 14- Red Marked-up Drawings



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 14.01- P&ID





Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

## 14.02- Instrumentation Drawings



Project: 01251-100  
CRUDE OIL TANK FARM PROJECT (AGROOD AREA)



System ID	030-CP-001
System Description	Piping Cathodic Protection System

### 14.03- Electrical Drawings